James Rush

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A
Course of Lectures
on the
Practice of Medicine
by
William Cullen M.D.
Professor of Medicine in
the
University of Edinburgh
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1769.

We are here met to give a Course of Lectures on the Practice of Physic; but it is not proper that we enter upon any part of our subject today. Therefore I shall only say a few things, relating more to myself than to the course I am to give.

I am to enter this year upon a new subject, which is of the greatest importance, as it is the great end and purport of all our studies combined together; and requires, with a most sound Judgement, our most serious attention... I shall endeavour to execute it as it deserves, as far as my attention and abilities will permit: and that on account of my learned and worthy Predecessors Dr Rutherford and Dr Gregory, both of whose Courses some of you have heard. I cannot hope to give you a Course so accurate as the one, or so complete as the other; yet nevertheless I am confident that the present method of having the Institutions taught by one Professor and the practice by an other, must be disadvantageous to the students; so it will be useful to them to hear different opinions on the same subject, and the sentiments of different Professors. Besides it is necessary also that you hear Dr Gregory on the Institutions and me on the practice, in order to see both of our Systems completed; for it is not to be expected that we should both agree altogether in Opinions, as we both think for ourselves. Therefore while we taught different Professions, and you heard one

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of us only upon a subject, it is probable that my theory in many parts might seem not to have its application, and perhaps Dr Gregory's Practice, for the same reason, might seem to be without Principles.

No Student of Physic ought to be too easily carried away by the opinion of any one; but he should study different Opinions, and then judge for himself. Therefore I think the present way of teaching will conduce more to the benefit of the Students than the plan pursued before: and this alone was the Motive that brought me here. It was not that I thought myself better qualified than others, or that I desired to disparage the abilities of others and show my own; for it was at the desire of the students that I came to teach this branch; and nothing but a view to their advantage could have induced those who have the Management of the University to admit of such a change in the department of the Professors.

It would detain you too long at this meeting to give any sketch of our plan, and the arrangement of the Course. Therefore I shall only observe in general, that I am to proceed on a Dogmatical Plan, but at the same time would be sorry to be less accurate than any other in the enumeration and arrangement of Facts; so that will likewise take in every thing that an Empyric plan would require.

I shall now give you the Ordinary Introduction to a Course of Lectures; by which I mean a history of the branch. I here expect that the Gentlemen are already acquainted with the gene

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general History of Physic, so far as it respects the several Sects which have subsisted, which I delivered under the Institutions — I shall therefore confine myself to the state of the practice in different ages, in general — you will be better qualified to understand me when speaking of the particular parts of the method of Practice, followed by many particular Physicians, at the end of the course, after yourselves are acquainted with the practice; at which time I propose to give an account of the Authors &c.

The first state of practice which we shall begin with, is that which would take place in the Original rude state of mankind, and would take its rise in the first beginning of society, from the suggestions that would naturally occur to men under uneasiness, and the troublesome feelings of disease, who are prompted to make essays for their relief; and also from the Observations of many spontaneous Cures which they would endeavour to imitate — This is called The Natural state of Physic, which many at this day are disposed to admire, and assert that by it many notable Cures are daily made — However, I am of Opinion that this Attachment to the natural physic of mankind, arises allegether from a Veneration of Antiquity, or prejudices in favour of Empericism, together with a love for the marvellous; by which they are superstitiously led to credit the relations of such Extraordinary Cures.

The only thing valuable in it is the efficacy of the remedies, by which Old Women, and such persons as follow this natural state of Physic, are said to have made sometimes great Cures — Yet this does not go very far; for from the Indians of America, who are in this natural state of practice, many specifics have been introduced among us, to which

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great virtues have been ascribed - They say the same of our High-landers of Scotland, where it is said this natural physic prevails -- And old highland women have been famed for making great cures; and even their prescriptions preferred to those of Physicians - It seems, however, that the practice of the highlanders is altogether at random: and if they do make any distinction, it is so inconsiderable, and, perhaps, ridiculous, that if they make any Cures, they are the effect of chance; for they do not proceed on any principles or regular determined foundation. I remember to have seen an Old Woman in the highlands carrying an armful of common Digitalis, or Fox-glove, a plant that is taken into our Dispensatory; and knowing that it was not an Esculent plant concluded she had gathered it for the purposes of Medicine. Upon enquiry, instead of finding the virtues commonly ascribed to it confirmed by the disease she used it in, I was informed she was going to give it to her husband in a Mania; that she had never know it used before in that Case, but had a mind, among other things, to try it - Their practice, then, is wholly at random -

It said that the merit of this natural physic consists altogether in the knowledge of remedies; and therefore as an objection to it, It is to be observed that many superstitious remedies are always employed in it, as Amulets, Talismans, &c &c: and none of these could have any effect, unless accompanied in their application with efficacious remedies - Indeed superstitious Opinions, and the mixture of superstition with the application of remedies, have always been more or less a disgrace to the Profession.

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Further, during this state of physic (as was instanced among the ancient Egyptians) the art was entirely in the hands of the Ministers of Religion, which was occasioned by a few artful men undertaking to lead the rest - This has often been done in Law Physic, and Divinity, as, having such a view, they would readily take hold of such things as carried the Interest of men.

In Egypt the practice was confined by Law to a few Remedies that had been introduced, and supported, and none but these were allowed to be applied - This effectually put a stop to every improvement; but as no patient was ever sent away without something being prescribed, it was necessary to invent many placebos to serve such purposes -

At this time, while the art was confined to the Temples, the Practitioners had to do only with Chronical diseases, such as were brought to them - But afterwards they sent out Clerical practitioners, who went about and visited the sick in their beds; during which period different sects of physicians arose - as to the State of physic in this time, we are in doubt what it was, even in Greece - However, it was at this period that the great Hippocrates flourished; though with regard to him, we cannot say exactly when he lived, or what were his writings, or the particular Opinions he held - However, at this time Physic had [illegible] on a better footing - The history of diseases was no[illegible]ended to, and they had made some advances to

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a system - Moreover they now attended particularly to the Regimen in diseases; and many Operations in Surgery were now in practice - However, amidst the many confused writings ascribed to him, they have undergone such changes by comes, and have had such different and various Interpretations laid upon them, that we cannot say any thing in particular with regard to his System - all that we know is, that he proceeded on a Dogmatic plan; and from the accounts that we can gather of him, we have sufficient reason to conclude that he was a very great man in his time.

The plan which Hippocrates followed was Dogmatic, yet it would be very silly and extravagant in any one at this time to quote him on a Physiological subject, and whoever does it may indeed hereby show his learning, but very little in comendation of his subject - Hippocrates and the other Dogmatics, his followers and Cotemporaries, though they entertained theories, were not very nice in the application of them; and in their practice formed general Indications only, upon which they proceeded: such as "to take away the redundant Fe" - They also laid it down as a rule that Nature cured Diseases, and that her method was to be followed by the Physician. Yet I say it can be shewn, that their practice, even upon such a plan, is better conducted, and on a footing preferable to that

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of Empericism.

About this time, then, and for some time after Hippocrates, all physicians are supposed to have been Dogmatists; but we can say nothing of them in particular. However, at last two great men appeared in the profession, of whom we can give an account somewhat more particular.

The first of them was Erasistratus. He made many discoveries in Anatomy, and as he was an accurate dissector, and consequently formed from thence many theoretical notions and maxims; but then he allowed to have too absolute sway over his practice, and not not considering they were conjectural. Accordingly he was led to throw bleeding and purging entirely out of his practice, which was a manifest abuse of Theory, as these are known to be very powerful remedies, and highly useful in many cases. But he made another abuse of theory, which you will often more excusable in the Physician, though perhaps not less pernicious to the patient. That you may understand this, I must observe that Theory tends to make men doubtful and cautious in their practice; and by it they become timorous in the use of harsh medicines. This was the case with Erasistratus; and as it had been the practice before his time due drastic purges, he perceived the bad effects that often arose from them, he therefore proceeded on the opposite extreme, either using no purges at all, or the mild Dietetic ones only. The maxim Saltem non

Nocere

Nocere, which was given by Hippocrates, and is a maxim which prudence and our own hearts naturally suggest to us, was strictly followed by Erasistratus.

Nearly contemporary with him was Herophilus - He also cultivated Anatomy, paid strict attention, and took a great deal of pains in accurately examining and ascertaining the pulse, and other parts of Pathology - He also searched much after remedies: and indeed this may is the pattern of the present age.

Much has been said in recommendation of the Empiric sect which appeared soon after, as a professed plan of studying and practicing Physic; and was instituted by Herophilus, and his Disciple Philenus of Cos - But it appears that their plan is rather specious than well founded; for they never have had any effect either in exploding Theory or improving practice; at least they have no traces of it. The noted Sextus, though he has been sirnamed Empiricus, was not so in his profession, but proceeded in his practice on a dogmatical principles.

You will observe that I am delivering at present what may indeed be called history, but which is not strictly such - All I intend is to give general Reflections on the different forms the practice of Physic has put on at different periods -

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The first state of Physic which I mentioned, scarce deserves to be mentioned at all – It is merely such as this day prevails in many parts of the world, where Science is not Cultivated; and even so near as in our own Country, where the man of the mountains has been supported to perform great Cures.

Next, physic appeared connected with religion, as was the case in Egypt, &c; and we all know that there was a time when the Druids were the only Priests, Lawyers, and Physicians – Tables relating to physic in this period being hung up in the Temples Dedicated to Æsculapius –

Then we viewed the state of Physic in the days of Hippocrates, which, with the Character of this great man that I would give you, is briefly summed up in what Dr Boer-haave has said of him; whom you may consult.

The first remarkable deviation in Physic after this, was made by Erasistratus – He connected theory with it, which he truly too much too, allowing it to govern his practice entirely: But immediately after him came Herophilus, who, on the other hand, as much disregarded theory: and it was either by him, or very soon after, that the professed Empiric sect arose.

The next remarkable state of Physic was in the days of Asclepiades – This carries us over to Rome, where at

at first they had no Physic among them, but what was per-formed by Charms. Here Asclepiades conducted himself with great policy. The Romans before his time had got a prejudice against the greek Physicians, on account of the cruel Operations of Surgery performed by Arcagathus; and altho, we have not sufficient authority to say, at some afirt, that the Greek phy-sicians were all banished the City on this occasion, yet it certain that the Romans for an hundred years before this had been rep--ugnant with strong prejudices against the physic of Greece. And indeed it would be necessary to introduce it by degrees, and some time would be required to reconcile them to the disagreea-ble practice of physic. Now Asclepiades observing this prejudice of the people, recommended himself by adapting his practice to their tempers, and humoured their Luxury. accordingly his practice mostly consisted in the various methods of Gestation, friction, and prescribing the use of Wine. By these means he professed to cure Celo, Tuto, et Jucunde, which was altoga--ther consonant to the Luxury of this age in Rome; altho, it was the last of the three that he chiefly studied. This me--thod of practice will always be more or less followed in a sickly age, where Luxury greatly prevails, especially among the higher ranks of people, who are generally most Luxuri--ous, and consequently most sickly. And in such Circum--stances many Placebos will be necessarily invented. Besides this Asclepiades also contrived a Theory according to the philo-

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philosophy of his time. Viz. that of his Contemporary Lucretius, which also had some effect in recommending him.

After him Themison methodized his Theory, i.e. reduced it to some more precision, which was the beginning of the methodic Sect, of which all the principal physicians at Rome were till the time of Galen. During this period the two well known Authors, Celsus and Aretæus Cappadox. lived, who were the only physicians of note among them who left any writings. Celsus indeed was not a professed Physician, i.e. not a practical one; and does not seem to have adhered very strictly to any particular Sect, but was as much an as human Nature will admit; for it appears that he was inclined to the methodic sect. The other writer, Aretæus was of a sect called the Pneumatic. His practice was bold and extensive; for every means in his power, Dietetic, Pharmaceutic, and Chyrurgical were employed in it

After this followed a very remarkable period, begun by the famous Galen. Hitherto the state of Physic had been much perplexed, and on an erroneous footing on account of the Opposition and Extravagance of Sectaries: but in this next period physicians erred as far by a servile Imitation. In short Galen at that time took the lead in Physic, pretending to follow the system of

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Hippocrates - He admitted in his practice all the remedies he could apply, and that is all that can be said for him; but he also established a Theory on a very narrow foundation - Many Physi-cians wrote after him in the succeeding Centuries; but all fol-lowed Galen exactly - This was occasioned in great measure by the fall of Literature, which took place soon after Galens time - Learning was indeed cultivated in some degree, in the mean time, in the East; and there was by that means a chance of its revival, remaining with the Arabians, or at least the Writers so called, whether they lived in Asia, Africa, or Europe - By means of these Arabians, then, Physic was in some measure restored in Europe - However from the 12th to 16th Century the Physicians of Europe were servile imitators of Galen - But about this time the greek Language began to be studied: and now there arose a dis-pute among the Physicians, some of whom were for restoring the physic of Greece, and others for keeping to that of the Arabians their Teachers - By these the famous Dispute was handled about this period concerning bloodletting, which made so much noise at that time all over Europe - However, both the Greeks and Arabic were entirely Galens System; for in the main they were both in Imitation of him. This division was not sufficient, but something stronger must necessarily oc-cur to overthrow the System of Galen - Accordingly soon after Paracelsus appeared. He made Chemical remedies more known, by which he made many notable Cures: And

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being of a bold overbearing temper, openly declared him-
-self an Opponent to Galen, Avicenna, Hippocrates, &c; and
making a great noise with his efficacious Chemical remedies,
succeeded pretty well - However the Chemists (who were the follow
-ers of Paracelcus) trusted too much to their remedies, and thereby
came to neglect a proper attention to diseases, which was a fault
not to be found in their Adversaries. Thus the practice between the
Chemists and Galenists was very different, each having very diffe
-rent Principles - An attempt was made to join these two together,
but it was destroyed in the beginning by the prejudices of the Ad-
-aries -

At this time all the Schools of Europe were filled
with Professors of the followers of Aristotle, and consequently his
Philosophy prevailed through all of them - But in the beginning of
the 17th Century Galileo made out his System, which over
threw that of Aristotle, and in consequence the Physic of Galen, which
was so much connected with it - In this Century Experimental Philo
-sophy was admitted, and the Chemists were cherished; and, what is very
remarkable, the Legislature of Paris at this time made a solemn
decree to restore the use of Anatomy in medicine, which had an
hundred years before they had in the same way condemned, and absolute
-ly forbid its use - Other Circumstances also concurred to produce
this change in the state of Physic, as the discovery of the Circu
-lation of the blood, which effectually overthrew the famous system
of the Lives by Galen.

The Chemists now formed to themselves a short
system of acid and Alkaline; neglecting the Organic System altogether,
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and therefore might have been more strictly called Humorists, which was the Epithet given by Van Helmont to the Galenists; for the Galenists admitted of Plethora, though in the main they overlooked the Organic System, and went chiefly on the Qualities of the fluids. Even the Solid methodic sect took too limited Views of the Organic System.

However, now the Circulation of the blood was discovered, and Mathematics, which gave a quite different face to Physic, as it appeared under Silvius, De la Boe, Etmuller, and Willis, who were the Leaders at this time.

But an accident happened soon after which greatly changed the Practice. Dr Sydenham started up, and became famous at London. He adopted the Academica, or Natura Morborum Medicatrix, which had considerable influence on his practice. He sought for theory to connect his facts under general heads, and not for facts to confirm his Theory. In short, he gave a model which every judicious practitioner ought to proceed upon. At present indeed, the bulk of Physicians profess to disregard Theory altogether, and adhere to Experience and Observation only. But this is true in profession only; for every one of us has his Theory, good or bad; and the Dogmata of the Physician will always have considerable influence on his practice. I shall next proceed to take notice of the particular Opinions that are at present held in Physic, and which, therefore, influence the practice of this age.

The first system of Physic which I shall mention to you, as now prevailing in Europe, is that of Dr Stahl, which first appeared in the end of last century, but of late, within these thirty years past has

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begun to fail; and it is remarkable that it was never received by any one in Britain till lately since it has been on the decline: While at its greatest height in Germany it never entered Britain.

This System chiefly consists in the Doctrine of the Natura Morborum Medicatrix, or, for the sake of a shorter Expression, what we call the AUTOKRATIA - The Doctrine of the AUTOKRATIA has indeed been always admitted in Physic more or less; but by Dr Stahl it has been carried much farther than by any other. Stahl thought that all the functions of the body were conducted by the Rational Soul; and therefore he and his followers neglected the study of Anatomy and the Mechanism of the Body - On the other hand others have confined themselves to the last, and, rejecting the Existance of an Immaterial rational soul, have adopted Materialism - However few Philosophers and scarce any physicians at this day deny that there is a rational Soul connected to the body - It is indeed best to proceed in a middle course between these two Systems, as Hoffman, Boerhaave, and White have done, and therefore have acted more consistent with Virtue and the promotion and improvement of their Science.

I shall say, for my own part, altho I think it of little consequence in Physic, that I admit the existance of a rational Soul, but would confine myself to the mechanism of the body, and meddle with this only so far as the AUTOKRATIA is connected with it - But Dr Stahls System does not depend on the concern the soul has in the AUTOKRATIA, as appears by a remarkable passage in the preface of Junkers Conspectus Therapeuticus - In short, the effect of

of Stahls system has been to give a timid and feeble practice: According they reject from this practice the use of Bark, Opium, and many other efficacious Remedies - However, after all they are obliged to adopt in some measure the mechanical state of the Body - Thus, they say, that the constant tendency of the system is to Putrefaction, and that it is the perpetual work of Nature to obviate it; which notion also gives some particularities in their practice - Their general Doctrine, indeed, superseded all Theory, but Dr De Haen has attacked them very strongly, and with great success, in his dissertation de Hæmorrhoidibus - However, this System of the Stahlians would not thrive after the improvement of Philosophy, and the study of Mathematics - But at this time Bellini and others applied Mathematics and Philosophy to the body, and had begun to reason concerning the functions on Mathematical principles -

In this state Dr Boerhaave found Physic, who was a proper person to reduce it to some tolerable system, being a man of general Literature - He adopted the mechanism of Bellini, then in fashion, and admitted many things from the antients, adapting his system to the facts related by Hippocrates, Galen, &c, and especially those of Sydenham - In short Dr Boerhaave was a man of very extensive Learning, and worthy to be greatly esteemed - I think a great deal of his system, and recommended it as the best for you to follow - But anyone who considers that since his system was first made known, 60 years of a very industrious age have elapsed, in which many Improvements and discoveries have been made in Science, cannot expect but ~~that~~ by this time we should take upon us

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to think somewhat for ourselves – It would indeed show great prejudice and very little genius if we should not.

I could give you many examples out of his System, in which he is very incorrect, but as it would spend too much time, I shall hint only at a few

1st his doctrine of the simple solids, which makes a considerable part of his system, is likely to fall every day; and he takes little or no notice of the living solids –

2. What he says of fluids is inconsistent with his own Chemistry; and his Glutinosum pinguie is not on a better footing than it was in the time of the Cartesians – Also the Experiments of Pringle & M'Bride have thrown great light, since his time, on the Nature of Scurvy, &c

3. In his general Pathology he has given with great accuracy the Affections of the Circulation, &c, but has omitted to take the least notice of the whole moving powers of the system, and did not consider how far the phenomena of the body might be owing to the affections of these Independent parts of the simple matter of the body, &c. The Nerves indeed were the last part of anatomy that was cultivated, for it was first attempted within these hundred years by Willis, unless you look upon the reveries of Van Helmont as such – Therefore the consideration of this part renders the system of Physic Complete – It was added by Dr Hoffman, and now, so far as I see, the system of physic is completed, as I do not see what else is to be added to it, consisting of three parts, the Nervous, Hydraulic, and Chemical systems, as

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according to the view I formerly gave of it in the Institution -

This finishes the account of the System of physic at this time, prevailing, and influencing the present practice. I shall add a short summary of them, as they are at present received in the several parts of Europe -

That of Boerhaave generally prevails through Britain, France, Italy, &c, where Physicians particularly attend to the functions of the Circulation, &c -

Hoffman has at present but few intelligent followers, and even those for the most borrow many things from Boerhaave.

Even Van Helmont has at this day a few followers -

The chief thing we have to attempt is a pathology of the Nervous system, which has never yet been attempted by any one. accordingly in this course I hope to show that it can be done, and that in such a manner as to improve the practice of physic and of right usin the Cure of diseases.

I have now given you a general view of the state of the practice of Physic, as it prevailed at different times; and especially as prevailing at present in Europe. I propose next to consider what plan we are at present to follow in teaching this very important Art.

It is absolutely necessary that all students one time or other should study this with attention, so as

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to know the merits and demerits of different plans, i.e. their advantages and disadvantages, and how far they may with safety be depended on; for whatever care we may take with regard to particulars, a great deal depends on the general plan we follow.

In my last Lecture I in some measure told you where the greatest room for improvement lay. I say, that at present we have a more useful and a better Theory, use it more cautiously, and constantly attend to Observation and experience. Our Theory is better, because our knowledge in Anatomy is more correct and complete; and our Chemistry is also more complete and systematic, and more applicable and useful.

The present age is jealous of Theory, and examines it to the bottom: hence greatly employed in Collecting observations. Hence also the great Compliment paid Boerhaave by Quesnay, when he calls him the author of Collective Physic. Besides we are now better acquainted with the History of Nature, and more light is thrown on natural Philosophy. Thus our knowledge in general is much enlarged in comparison to what it formerly was, and that particularly with regard to diseases; for here we have been of late taught a great deal by the Dissections of morbid Bodies. Therefore I say that at present our Theory is on a better footing; yet at the same time allow that in many

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respects it is imperfect - And I even esteem it one of the merits of the present age, that Physicians in general treat little of Theory, and never admit it unless proved as a matter of fact. Theory in weak minds is apt to be abused and misapplied, so as to be of ill consequence; but I say that a man of Judgement will always be able to use it with propriety and advantage, well knowing the nature and powers of the Instruments he has in his hands: and I assert that the more attention he spends in the study of it, the better he will be able to make a proper and advantageous use of it - But (as I said before) the present age is very jealous of Theory, least it have not a sufficient foundation: and Physicians are, therefore, much inclined to make Experiments to prove, or try, the truth of Theories; which I also reckon another article in the merits of the present age, as the consequence of it is to collect a number of facts to gather, which is chiefly advantageous, and tends much to increase our knowledge - In this, indeed, the greatest part of Dr Boerhaaves merit consists (according to the Character given of him by an excellent Author); for he was very diligent in collecting facts, &c - Now I say that whoever is thus diligent in the collection of Facts necessarily uses theory in comparing, arranging, and forming more general facts from them - This even Sydenham did, and all the most eminent Practitioners

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of every age have done the same.

However, in the plan that we are to pursue there is a great deal that is non purely theoretical, which, therefore, might give offence to some.

The first Question that occurs, in the Cultivation of Physic, is, whether it is to be followed on a Dogmatic or Empiric Plan? I must first observe to you, that all the schools are on a Dogmatic plan, as it were, through necessity; while the Practitioners of physic profess, at least, Empiricism, and affect to disregard Theory. By this they give students a prejudice against what they are obliged to enter upon; which, by the bye, I look upon to be amazingly ill judged, and of the most hurtful Consequence; for by neglecting theory they must neglect many important facts. I cannot at present pretend to discuss this Question at full length, but must suppose it done already in the Institutions, which I take it for granted you have all attended; if any of you have not yet studied the subject, I advise you that it is still worth your whole in this place I shall only observe upon the whole, that both Dogmatism and Empiricism have their advantages and disadvantages. Both have their defects, and are each in many respects imperfect; for there are as many false Facts related by authors as there have been false Theories invented. and moreover I assert, that every practitioner, even he who professes himself most averse to Dogmatism, uses theory, and that too freely very frequently, and with the worst and most pernicious Consequences on account of the general prejudice.

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But to adhere more strictly to the point in hand — In defence of a Dogmatic System I use these Arguments:

I.st I say that reasoning in Physic is unavoidable, from the natural propensity of the Human mind, and therefore, in order to render it safe, it is necessary to cultivate it in its fullest extent.

II. a Dogmatic Plan has been proved best for collecting and pointing out Facts.

III. No Emperic system has lasted long: Mankind naturally tend to Theory, to explain every thing as Cause and effect. Scepticism may show the falacy, but never contradict this propensity to reasoning — The only remedy is to prove the Reasoning, and make them better reasoners, by engaging them in the study of the subject in its full extent — By paying much attention to a particular subject, and directing one's studies especially to it, that a man comes to reason more justly, and to have a more round and comprehensive knowledge of it, so as to enable him to judge more accurately in matters relating to it than others; for no man will be cautious in reasoning, who has not been much experienced. Thus a Physician will often reason concerning matters in Law, but in so doing he only gives the Lawyer an Opportunity to smile at his weakness and the shallowness of his Judgement: And on the other hand, I know that a Lawyer will often make himself ridiculous, by attempting to reason in Physic —

In short, I really never yet saw a practitioner that did not use Theory; for at the same time that they are envieghing against it, and say "Paracelsus was a fool, Van Helmont

"Helmont a madman, and even Boerhaave, among the rest, had his Weaknesses" — Yet in their own practice you will hear them say, "this man is Plethoric, and therefore must be blooded — If his "stomach of that is foul, and he should have a Vomit to cleans it — "And a third has his blood full of Acrimony, and therefore ought "to be purged" — Now I say this is theory to all intents and purposes, and that too of a wrong kind; for I have frequently seen a fat man be deemed plethoric, and for that reason blooded, when it was evident the Judgement was erroneous — I have also often seen a man get a Vomit when his stomach was not foul, but laboured under sympathetic affection — and a purge adjudged another, with a view to evacuate Acrimony, when he had even a very slight Cutaneous Eruption only; &c —

Therefore I reckon the propensity to reasoning unavoidable in men, and the only remedy for it is to engage men in the diligent study of it in its full extent, so as that they may use it with propriety —

By a Dogmatic plan only it is that we can expect to enlarge our Collection of facts, so as to form a system — If it be acknowledged that many of our facts in Physic, such as the cure of diseases by particular remedies, &c. have been discovered by chance, and not by Experiments made in Consequence of reasoning a priori; but then it has been the Dogmatists alone that have collected and preserved these facts — This part of my argument is know to be true — But the latter part, perhaps, does not appear so evident —

I said further that a Dogmatic plan is necessary to the enlargement of our knowledge in physic, and energy

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encreasing the Collection of Facts - To make this appear, I say, that in order to render the Collection of facts useful, it is necessary they should be arranged properly - All the particular must be arranged into Genera and Species, as in every other subject of the kind - In short all Practitioners agree that a Nosologia Methodica is absolutely necessary to the Cultivation of an Empiric plan, and this according was attempted, as I know about 40 years ago by Mr Sauvages, but with what indifferent success every one of you must see who have perused his work, and have any considerable knowledge of the subject - However I shall soon put something into your hands that will show how imperfectly the design of making out a Nosologia methodica has hitherto been executed - Therefore the chief requisite to an Empiric plan has as yet been wanting - Further I say that even this does not at all answer the purpose of directing our practice, which is a certain symptom that the particulars are not properly arranged, or defined - No one genus can be accurately defined, but from a knowledge of all the species, or particulars, of which it consists. Now, as it appears that the Nosologia methodica cannot be made perfect till the particulars of which it consists are all known and collected, our attempts in Systems must therefore at present be to enlarge our Collection of facts. And now, by way of digression, I say a little of the method how this is to be done. -

I imagine that in the Collection of useful facts our

our chief and greatest source is from the Dissection of morbid Bodies (Savauges, indeed, professes not to admit or make use of this in his distinctions, i.e. the internal seat, or proximate causes of diseases; but yet he tacitly does it, and indeed is under a necessity of doing it); and this too is the most accurate method by which we can collect our facts – Now this Dissection of morbid bodies cannot be done with a previous knowledge of the healthful state, nor can this be done without the study of Anatomy, and the use of the parts, which includes Physiology, &c. I have therefore now shewn that our progress in System depends upon the study of particulars, and that this cannot be done to advantage without the knowledge of anatomy, Physiology, &c – In short, it appears upon the Whole, that at present we can have no other foun-dation for the improvement of our knowledge and and attempting a system in physic, than the study of a Dogmatic plan; for without it we cannot with any accuracy ascertain the facts we would collect with regard to Pathology, or application of Remedies, and their effects –

For certain Reasons, which I do not mean to trouble you with, we are not to begin our important business as yet. I therefore choose to spend the time in engaging you in the study of the proper plan for the Cultivation of Physic; and that more spe-cially, as from certain Circumstances, you are liable in this respect to be led wrong –

The Theory of Physic is a great and difficult work: Many Youths have not genius, other industry, to Comprehend it; and (what is more unhappy) others have not time and Opportunity,

though

though blessed with Capacity: Therefore we shall give an
-ton such all the advantages that can be obtained from
an Empirick plan - Many practitioners who themselves have
been incapable of Dogmatism, or have neglected it, endea
-vour to prejudice others against by their advice, from
the same principle that the Fox that had by chance lost
his tail, would persuade the rest to cut off theirs also.

For the sake of such students as are capable of
a Dogmatick Plan, I use, in defence of it, three Arguments
which I here propose to you.

First, that Dogmatism is unavoidable - This I
have already fully defended -

Secondly, that all our valuable Books were wrote
by Dogmatists - And I also said that in physick, as in natural
History, in order to a system, it is necessary to pursue the study
at large - And Moreover I add, that though Hypotheses
are not generally to be admitted willingly, yet they are useful
in Science; for it is to them that we owe the most of the Expe
-riments and facts in physick and Philosophy - The System
of the Universe by Sir Isaac Newton, which is now so well
established by Experiments and Observations, was first
set on foot by preconceived hypothesis, &c - Solitary facts
are often useless, but when collected and compared by rea
-soning, are of the utmost importance -

Further, every one must allow that it is necessary
to take in remote Causes, along with other Circumstances, for

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Discriminating diseases — Now a Dogmatic System is absolutely to enable us to determine the Operation of these (as they are very various, and as they are varied by the state of the body), so as to ascertain them with any degree of accuracy; i.e. we must have a knowledge of Physiology and Pathology —

Also, I say that a dogmatic system is likewise necessary to the ascertaining facts with regard to the Remedies applied — The dispute concerning the peruvian Bark, the great boast of the Empiric plan, viz, with regard to the proper methods of using it, could by settled by the Dogmatists only; at least, I shall hereafter show you that the matter has been brought to any precision by the Dogmatic plan only; and the same is the case with regard to other remedies, our facts in physic being rather Inferences of Reason than Objects of sense — In short, it appears that it is impossible for an Empiric System to be perfect till a Dogmatic is also; and that they necessarily go hand in hand —

My third argument for Dogmatism depends on this, that any attempt to teach Physic on an Empiric plan has hitherto proved fruitless, nay often pernicious — What Dr Sydenham has done in physic may seem an exception to this, and indeed so far as he has done it is commendable; but I deny that what Dr Sydenham has done was on this Empiric plan — His Processus Integri indeed appears so, but look into his large work, and you will see that his Collection of facts is upon a Dogmatic plan —

The

The Works of Dr Shaw of England, and Mr Lieutaud are of the Empiric kind - The former is now much neglected by every one, and does not, therefore, merit our more particular notice - As to the Latter, he says in the beginning, when speaking of the plan of it, that his design is to collect the parts of physic - It is indeed an attempt to give an Empiric system - but does not answer the intention - I shall here only consider the work in the light of a System of Physic; and as a guide to practice - and as such it is in the highest degree imperfect (see, for example, what he says under the Title of his "Affection Hypochondriaque" of the French Edition): He has no where ascertained the Genus of the Disease - He has indeed frequently attempted what is called in our Inaugural Dissertations, an Historia Morbi, i.e, an indigested Farrago of symptoms enumerated together, but has never once attempted to reduce them to any order, or regularity of succession - He has often formed a Genus from a single symptom: hence in his history of it he gives symptoms of many different diseases, examples of which you will find in the Dolores, Cachexia, alvus adstricta, &c. and also has frequently in the end given us the morbid appearances he had found from dissection, which he was much conversant and very experienced - But this part of his work edifies us no more than the rest; for as he does not connect his Dissections with any particular concourse of symptoms, nor make use of them towards investigating proximate causes, they are useless -

Next he gives us a most undetermined method

of

of Cure, viz, a List of Remedies that were ever (or perhaps at pre-
-paps in the present practice of France are) used in every spe-
-cies of the disease - See his introduction to the Cure of the
asthma, which may apply to all the rest - Such practice is but
groping in the dark, which is indeed putting our practice upon a
very indifferent footing, where our Prescriptions are so undeter-
-mined, and we proceed so much at random -

Next (in page 178 of his Latin work) see the List
of Remedies that is drawn up for the Cure - This is what he
calls knowing Practice - It is just such as every Apothecarys Ap-
-prentice may know - But indeed I would not secure an Appren-
tice of twelve months standing, who would give the remedies such
an injudicious arrangement - Mark how they stand "Whey,
Calfs broth, &c" - Indeed M. Lieutaud himself marks what is the
defect here, viz, that we want the knowledge of the proximate
Causes -

I could give you many more examples in M.r
Lieutauds work - but I shall take notice of one more article
only, viz, a method of Cure - For the most part, when I
see a method of Cure laid down, I can, without seeing any
further, judge what disease it is for - But here it will be
found otherwise - I shall read you over a Clause, and then, though
many of you have applied for years to the study of medi-
-cine, and probably think yourselves pretty well acquainted with
diseases, I doubt very much if you can guess what the disease
is. (see the Example in Vertigo) This, according to M. Lieutaud, is

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a guide to practice - Whether will you say that all these remedies ought ever to be used together? But I add that though Mr Lieutaud in his Synopsis Medicamentorum afterwards arranges the remedies according to the Indications, or such principles as are laid down by Dogmatists, yet even now it does not answer the purpose of directing our practice - Such, then, is the success of an attempt to a system made on an Empiric plan! and I really believe that a system on such a plan, at present, impossible; and therefore it is absolutely necessary that we desert this, and attempt it on a Dogmatic plan -

I am persuaded that the further you advance in your studies, you will more plainly see the propriety of studying a general plan, for the Cultivation of physic, and will therefore the better excuse my insisting so much upon it at present - I think it necessary to obviate an Opinion generally prevailing "that all theories are nonsense" - To the first argument I offered to that end; I shall now only add an illustration -

Some time ago there was a great Dispute prevailed in France, concerning the superiour excellence of antient or modern Science - Some chose to give the preference to the former - But M. Fontanelle adopted the side of the moderns, and, among other things, said, that they

had

had this advantage over the antients, that the more Opinions and theories they had already rejected, the nearer they were to the truth; for the greater the number of false Theories that have been rejected before our time, the fewer we have remaining still to reject; and consequently the nearer we are to the Truth –

I have nothing to add to the second argument –

But as to the third, I observe that I was obliged to enter on a very disagreeable Task, of criticising the work of an author – I shall decline saying any thing more on this head at present, but shall take occasion hereafter, while we are upon particulars, to make such observations on the works of M. Lieutaud and others of the same sort, as I shall find necessary –

I hope you are all now well convinced of the propriety of pursuing your studies on a Dogmatical plan; and therefore, with respect to it, shall take notice of only one thing farther –

It is generally said, that however Physicians may differ from one another in the particular Opinions or Systems of physic which they profess, yet their practice is just the same, and they all agree in one general established method – In the first place I say the fact is false; for though good nature and their regard to decency may always give Harmony in Consultations,

yet

yet I insist that wherever Physicians differ in their Theory, (if they are not under controul, but at liberty to do as they please) they will also differ in Practice - Formerly, indeed, all the prac-titioners of this place were of the school of Boerhaave, and held his Theories, for which I found them for the most part pretty uniform in their practice, being all directed by the same Opinions in theory; whilst a few remaining who were incapable of any Theory, endeavoured, as well as they could, to imitate the fashion established by others - I say, then, that in fact every man who has a particular Theory, will, if by himself, be swayed by it - Accordingly we find that the practice of different Sects is different; for very unable Physician will see the difference between Galenists, Chemists, and Cartesians - No one can think with horror of the phy-sician mentioned by Lieutaud, who according to Theory bled his patient 100 times in a year, and so killed him; never sus-pecting he was doing amiss..... Or, without ridicule, of Van Helmonts death, who from theory refused to be bled in a Pleurisy, expecting to cure himself by a little Sar-gens Thrici - But I spend your time in proving what no body doubts - I will only observe further that the established Practice has been laid down by Dogmatists -

I shall suppose that you are content to follow me in the study of physic upon dogmatical principles; but I must not omit to warn you that our Theories in the present state are liable to imperfections and fallacy - I would therefore advise that you be particularly cautious in receiving them.

and

and being aware of the fallacy to which they are liable, you will examine them with the most accurate scrutiny, and admit none that are not clear and plain - I shall endeavour to give you no conclusions that are contradicted by known facts... At the same time I shall give such an enumeration of facts, that I should be ashamed if any Course gave a better than Ours; and then I shall arrange according to a Dogmatic plan, so as to assist you in the application of them..

Take it for granted that you know what I mean by a Dogmatic plan - It supposes a knowledge

I. Of all the powers acting on the Body -
II. Of the Anatomy of the Body -
III. Of the Physiology, or a knowledge of the Laws by which both the general and particular Functions of the system are performed.

IV. Of the Pathology, or an acquaintance with the diseased functions.

V. A knowledge of the manner by which the disease is to be removed ..... and

VI. A Dogmatic plan requires that you know how to find the proper means for doing this, by an acquaintance with the powers ..... Which is shortly no

thing

nothing else but a knowledge of the Institutions of Medicine —

I shall now give an account of my present intended Course, with the Order I shall follow in giving it

And upon a Pathology premised, I shall take Diseases, not as simple, but Compound, as we commonly find them ..... I shall consider them as they are distinguish-ed, by a steady Concourse of symptoms, into Genera, according to a Nosologia Methodica, which is a study I would engage you in — For this purpose I put in your hands the Prima Lineia of an attempt to a Nosologia Methodica ... You have there the Genera of Diseases as they are distinguished by Sauvages, Linnaeus, & Vogel, who have each given us their systems of a Nosologia Methodica, and afterwards I have added an attempt to-wards one of my own —

My Plan is this.

1. I shall take notice of the Concourse of Symptoms belonging to each Genus.
2. I shall endeavour at the Proximate Cause of the Genus.

This part of our plan is in a great measure imperfect, as it is not always in our power. In some

Cases

Cases we can explain the Proximate Causes pretty clearly, but in others we can only point out the way, without applying it to every particular - Here we shall trace it as far as we can to direct us in our method of Cure - Besides these there will be a few cases (and I hope they will be few), where I shall be able to make scarce any conjecture, but proceed on a plan almost purely Imperial -

I shall abstain as much as possible from particular Opinions, and shall adopt the Dogmatism of Dr Sydenham only with improvements from our late advancements in anatomy and Physiology - I shall give a species of Dogmatism as yet but little known among Physicians, but which I conceive will not be refused by any Empiric.

3. From the Proximate Causes and the Phenomena of Diseases, I shall endeavour to fix the Character of the Genus, and also to distinguish it into species, and Characterize these.

4. I shall give you the Remote Causes, connecting them with the Proximate.

5. Where it is necessary, I shall give a Prognosis from the proximate Causes, taking Care not to suppress any fact relating to it, which ever way it may tend

6. I shall in the last place attempt the Methodus Medendi -

Here

Here I shall endeavour to form Indications on the proximate Causes; but shall always show where it proceeds with the greatest Certainty -

Besides this, that nothing may be neglected, I shall take notice of the several methods of Cure that have been practised, and the remedies that have been used in the diseases. Thus, if you do not like my dogmas, I give you Empericism; and this is my plan, by which I treat the Genera of all Diseases -

Next as to your method of studying with this Course, I apprehend it is neither necessary nor practicable for you to read much - Nay, I know that Gentlemen, from want of time and other Circumstances, cannot possibly at present enter into an extent of reading for the general study of the practice of physic - The chief thing then, that you have to attend to, is to follow my Lectures as well as you can -

In teaching Science there are two methods by which a Professor may proceed in giving his Lectures

1. He may give the practice of Authors exactly in the common order followed by them, and in so doing may use a Text Book. or,
2. He may proceed on his own footing, and make what improvements he can, either in the matter he gives, or the Arrangement; for which there cannot but be the greatest Room in Physic, which is in a condition so fluctuating.

Indeed,

Indeed, I should have but a poor opinion of the genius, or at least of the diligence, of any professor, who did not attempt something of this sort – I am therefore, with all humility, to attempt such a method –

With regard to the reading that might accompany this course, I can hardly direct you to any that will – such Gentlemen as are further advanced might compare the systems of Stahl, Boerhaave and Hoffman, which are now much in vogue, with what I shall deliver; and to this purpose, in the Genera Morborum which I have published, I have mentioned the Synonyma of each Genus, with references to these three authors –

For Stahl's system, the books I recommend to you might be Junker, Lector, or Alberti – But as in this country Junker is most easily got, and is the one I most commonly find in the hands of Gentlemen, my references are all made to it.

I would have you all read Sydenham, and have the Nosologia Methodica in your hands . . .

I am now to enter on teaching the practice of physic; and here I cannot pretend to aim at Elegance of style, or attempt good Composition in my language – But the chief thing I shall have in view will be precision and perspicuity –

The objects of Practice are two.

1. The art of Preserving Health, and
2. Curing Diseases –

The former ( ) is generally brought under the head of this

Institutions; but you will remember that I omitted it when teaching that branch, and for the same reason do not take it in here; because we have no direct means by which we attempt the preservation of Health, but the whole will, on Examination, be found to depend on avoiding the Causes of diseases -- And therefore the Hygeeina depends entirely on the knowledge of the remote and Predisposing, or Antecedent Causes of Diseases - I shall therefore chiefly take in here such Causes as require a certain Prophylacis - These I shall take notice of in particular - With regard to others, they require only general Inferences, which may be made afterwards, and be understood only after you have learned the practice, or Cure of diseases.

And now upon the whole, after all I have said of the Dogmatic and Empiric plan of studying Physic, I desire that our practice may depend as much as possible on Experience - Our chief attention must be employed to distinguish between diseases as they differ from each other in their Symptoms; for you all know very well that they are not distinguished sufficiently by their names - To give an Example - I find a disease which I have never yet seen - I do not trust to Theory, but look into the Observations delivered by authors, and there so what disease I can most properly refer it to - Now I have here a method of Cure laid down by the Authors, and have it well attested by good authorities, that certain simple remedies, as bleeding, purging, &c, or such general remedies which we are well acquainted with, have proved successful in the Cure - I try these in the

Case

case that occurs to me, but find they do not answer; therefore, the remedies be good and the Authors deemed faithful, I must not impute it to any false relation of the Experience delivered by these Authors, but to an error in myself, who made a wrong Judgement of the disease, and concluded that the case in hand was improperly referred to the Disorder mention'd by the Authors.

Authors have hitherto given definitions of diseases according to their respective Theories, which should therefore differ according to their different Opinions — Accordingly Sauvages in his Prolegomina has collected no less than ten different definitions of a disease to well know as the Pleurisy. But of late, finding the fallacy of them, they have rather chosen to give an historia morbi — But even with this, a physician treating a particular disease, will be at a loss; for he will find many symptoms there mentioned which do not occur in his patient's case; and there may also be many in his patient's case not taken notice of in the History —

No Order or Series of the succession, or Combination of the Symptoms, has been ever attempted, altho' you will see in the preface of Sydenham, and through almost all Baglivi, that the defect has been noticed and grievously complained of — We have, therefore, long looked for Pathognomonics, or such essential symptoms as constantly occur, and belong to every one of the Species of this Disease — These, though long wished for, have not yet been

been found – Hoffman, Boerhaave, and other Systematics in their works have treated only the Genera of diseases, and left the species to Theoretical notions – But this insufficient – and (however I may myself be abraided for the same defect) I declare that it is necessary that we should defend also to species – It is difficult to execute this, in which the Dogmatists have been defective; but to do this the modern Empirics design by their diligent and accurate Collections of Facts which they speak of – But they have never answered the Intention – In Mr Lieutaud's Synopsis, in the Example of Hypochondriasis, he gives for his Historia a number of Symptoms, which never all occur in any one case; and after this, having given such an account of the species, he actually gives a Theoretical Cure – And that, an Empiric plan, when such an historia morbi is pre-mised, can only be given by laying down a number of undetermined remedies in a List, without any thing to guide us in applying the use of them to Particulars – But we are not entirely at the mercy of Mr Lieutaud – Drs Pringle, Huxham, Cleghorn, Morton, and Sydenham have given us excellent Observations on particular diseases – But the misfortune is they have not treated all diseases in this manner; but many yet remain untouched: therefore we are at a loss concerning all, excepting those on which these Authors have touched – For Example, Pringle has given us an excellent account of the marsh-fever, but it would

not

not have been so, had he not compared it with with the like Fevers of other Countries, and such as are described by other Authors -

Some people are disposed to sneer at so great a nicety or accuracy, and to esteem it trifling, or both useless and troublesome to deal with such minuteness and particulars - For Example - Many of our Contemporary physicians are apt to laugh at the minuteness of Naturalists. You know that at this time 10,000 Plants are known and distinguished by Botanists, but only 300 of them are used in Medicine - Now one of the persons I am speaking of would say "I cannot Embarrass myself with "all these, but will be contented to know those 300 only "which are used in Medicine; for a knowledge of the "rest would be troublesome and useless" - He does not consider that it impossible to say whether or no some advantage may not hereafter accrue from pursuing the subject further - But besides, it is absolutely necessary that some one should study the subject with minuteness, in order to enable us to convey our meaning to Posterity, or to those at a distance; for you know that no one object can be accurately defined, except it be distinguished from all other species, which implies a knowledge of them all.

Now I say that diseases ought to be distin-

guished

distinguished with greater accuracy and minuteness, than heretofore - The best method then for doing this, is that of the Botanists, viz, to divide or distinguish them into Classes, Orders, Genera, and Species - The usefulness and necessity of this was long ago seen, and the matter proposed by the Sagacious Sydenham - It was also hinted at by his Cotemporary Morton, and since him by others - and also a Scheme was given for the Execution of it by Baglivi - &c. However it was never attempted till about the year 1731, when M. Savauges of Montpelier, undertook the work, with the approbation of Boerhaave, who in a Letter to Savauges takes notice of the great difficulty of executing such a work, but at the same time the usefulness of it.

It is not improbable that his first attempts should be extremely imperfect - As some of the first publications of his Scheme under the Title of Nosologia Methodica were - Even the third Edition of it, published so lately as the year 1759 (which is the earliest I have seen) is but half a Duodecimo - Hence many of our present practitioners will not hesitate to tell you that every work of this sort is useless, and impossible to execute - But I warn you of this, and loudly pronounce the utility of such a Study - There are indeed many old practitio-

-ners

Practitioners, who are resolved, either openly or in whispers, to derogate all new improvements in System, and specially those (of whom we have several among us) who have no Idea of system, even with regard to natural History — But the Judgement of such as these ought to be set aside, and altogether disregarded, as having no weight.

To those whom I have already mentioned, I shall one more authority only for the propriety of compiling a system, or Nosologia methodica .. i.e. Gaubius (see what he says of it in his Chapter " De Ordinandis morborum Differentiis "). However I would not so absolutely maintain the Propria, necessaria, et semper eadem Symptomata as he does; for the differences of temperaments, climates, and other Circumstances must make considerable Variety — He concludes in par. 840, and declares himself of an Opinion quite opposite to that of the persons we have just been mentioning — He is here very confident as to the propriety and possibility of the execution of such a scheme — this a little particular as to the Curiosity of ascertaining the names of diseases, and says that such a work will go further than this, and serve to distinguish Diseases in their nature and Cure — With regard to the old Problem, in the words of Dr Stearn " Dato " morbo Invenire Curationem " I am of Dr Sydenham's Opinion, that if we knew the disease, we shall know the Cure — Having, then, supported my scheme with such an

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authority as Gaubius, I proceed to my subject.

I have here published for you what may be called the Prima Lineæ of a Nosologia Methodica - Mr Sauvages has the honor to have been the first who ever attempted a work of this sort, though some deny it him - Since his first Publication he has always in his succeeding editions made very great Improvements in his System - After several Edi-tions of his general scheme in his Pathologia methodica, he at last, in 1763, published his Nosologia methodica, sistens Morborum Classes Gen.os, in five Volumes 8vo - Since which he has published another Edition of it, with considerable Im-provements (which is the last), printed at Amsterdam 1768 in two Volumes Quarto - This is by much the most perfect, and is undoubtedly a very valuable Book - It is in this last Edition you must study and consult on occasion, if you please

Within these ten years two other Authors have made attempts of this kind - The Accurate Linnæus, so fa-mous for his Skill in Natural history, has given us his system - And also M. Vogellius of Gottingen, has published a Genera Morborum - However, as these last are scarce, and not easily got in this place, and besides would be too bulky and inconve-nient for you to bring to this place, I have published along with my own, these three Systems, which you may have an easy view of, and may readily compare together - Now you have all the systems of this kind that have been Published -

Yesterday we gave a long preface to the be-gin

business of our Course. I was desirous to inculcate that no-thing was more necessary than an accurate Distinction of dis-eases; and we have by no means as yet obtained this, so as that it might give us a proper and steady practice. The necess-ity of such a Nosologic System, has been long seen by the good and wise. But the Dogmatic systematics failed in it, and the Empirics have not filled up the deficit. The reason it has not been executed is, that we have never taken the right method of doing it.

It appears that the best method is that which the Botanists follow in distinguishing the Numerous Ob-jects of their Science; for, according to the maxims the Logicians have delivered, nothing can be accurately defined but by its Genus and Species. However, I know that many practitioners are disposed to declare against every attempt of this kind in system. But in Opposition to these I gave you great authorities, whose opinions were highly in favour of the Propriety of such an undertaking, specially Dr Gaubius, who has a very clear Idea of the nature and utility of it. I would therefore have you carful-ly read the whole of what he says on the subject, as quoted Yesterday; for every sentence he has delivered on it has some particular meaning in it. I told you what progress this work has made within these few years in the hands of Mr Sauvages only. I also told you that Linnæus and Vogel had each given a Genera Morbo-rum. Now all these, for convenience sake, I have pub-lished

published together, and altho' think every one of them of great value, yet in my present situation I am under a necessity of finding no fault with them - Therefore, as an Apology, I yesterday gave you the Opinion of Dr Boerhaave as to the difficulty of executing a work of this kind - And indeed it is not possible that it could be brought to any degree of perfection in it - Therefore I have given you also a Synopsis of my own, in which I have endeavoured to improve on the others - It was a long time before I would resolve to hazard such an attempt in print, and even now, from the short time which was allowed me to prepare it, I am afraid there will be many Errors in it, more than I shall be able to account for -

Having now acquainted you with what the Text I have put into your hands consists of, I must next say something of the manner of using it - And first I must say something of Method in general, which indeed will be a digression, or what I would a condescension, but is absolutely in our present situation - And now, once for all, I make an Apology for this, and other such Digressions - I am certain that what I am going to say will be useful to many of you, as those especially who have paid any attention to Botany, or any part of Natural, will know very well what method is already; but as I am here situated I consider myself as a Sea Officer, who has the Command of a Convoy, and thinks it his duty to wait for the slowest sailer in the Fleet - This, then, will apologize for the present Digression -

I say that Method is a natural Operation of the mind, and one that it is naturally determined to enter upon - Suppose a man of sense and Reflection (who had never seen the Objects of this world before) dropped from the Clouds into the park, where three or four hundred Fallow Deer are graizing - Pleased with their various attitudes, &c, he directs his attention to them; and altho' their first appeared to be a great Variety among them, he at last, on more accurate Examination, finds them very uniform, and that the same form runs through the whole flock - Suppose afterwards he sees in another place a flock of sheep - there he finds a manifest difference from the Deer which he had before contemplated; and takes notice also that the same uniformity of shape runs through the whole of this Flock - Next he gets into a Forest and comes across a flock of stags or red deer - At first sight he thinks them nothing unusual, but that they are the same he had before seen in the park, but afterwards he finds a difference. They stare wildly at him, and he is in danger of being attacked, &c: In short he finds them some what different from the Other, though they bear a considerable resemblance - after this he sees what are called African Sheep - now then from reflecting on what he he has seen, and the Comparisons he makes of them, he establishes two Genera out of them, each containing two species - and this is the way he gets the Idea of a Genus comprehending its Species - a Species is that which admits of a

division

division into individuals only: and a Genus is that which admits of a subdivision before it reaches Individuals — This man acquires as many Ideas as he sees objects — Thus we abstract and Generalize —

In the next place I suppose our Stranger is brought to a place where he sees a dog — Here he observes no horns, the feet divided into five toes, and that it differs also from all he had seen before in the Teeth &c. — In short he finds that the dog is to be distinguished from both Genera and Species he had seen before, and can be united with them under a higher apartment only — Now, to make the thing plain, suppose he next sees a Fox, which he finds to resemble the dog, that they may be united and ranked together, still to be distinguished from all the rest — afterwards he sees a Cat, and then a Lion, which two he finds to unite together in a Genus, as the Dog and Fox, and that all these four together are distinguished from those four which he first saw — accordingly he unites the dog and Cat kind together into a higher apartment, and distinguishes them by the same general Marks from the others, i.e. the red and fallow deer, the Common and African sheep — Thus naturalists of these have given us Orders — The Dog and cat kind they unite under the title of FERA, and the Deer and Sheep under PECORA — Next

The

Stranger we are speaking of, see birds flying over his head — These he readily distinguishes from the whole body of Quadrupeds — And lastly makes a distinction between animals and the trees and other vegetables growing around him — This analetic method, then, is that in which we naturally proceed in attempting a System — We proceed no further than distinguishing individuals which constitute the species — The next higher apportment is the Genus proximum, comprehending the Species, to which Systematics have given the name of GENUS simply — The next, or the genus which comprehends them, they call an Order — The next, which comprehends the Orders, is called a Class: and lastly the Classes are united together to constitute a Kingdom — This, then, is the whole of method explained

You would imagine that the higher apportments would be easily distinguished; but we cannot without out difficulty say what number of division they may admit of — The last end, or what we have in view in method, is to distinguish accurately the Genus and Species. We generally distinguish the Species by the name of the genus and the specific differences — Thus in the Character of the Species of the fallow Deer, naturalists first take the name of the Genus (Cervus) supposing it already defined, and then recount the marks by which it is distinguished from all other Species — They do not admit in the Character of a Species even the name of the Order, Class, &c.

be

because they are already supposed to be plainly and accurat-
-ly distinguished in the mind - But a species is never clearly
and accurately distinguished and defined, unless the Class,
Order, and Genus are all taken in - and next is men-
-tioned the distinction from the other species -

This applied to Animals is called a methodical
division.... and to discover a Methodical Nosologia —
Method has been very useful to us in ascertaining the various
the various Productions of Nature - To illustrate which I
shall give an example - At present upwards of 10,000
different plants are known to the botanists - Now sup-
-pose a plant I am unacquainted with is presented to me,
and I desire to find out what it is - Without assistance
from method I could come at the knowledge of it only
by comparing it with the discriptions that have been of
each of the Ten thousand; but this would be an im-
-mense Labour which no one would choose to undertake.
Whereas by the assistance of method I can find it out
much easier -

First, supposing the whole 10,000 Plants are
divided into 20 Classes, by ascertaining the Class to which
the plant in hand belongs, I at once reduce my enquiry
to about 500 only - Next supposing this Class to be
divided into 5 orders, by ascertaining the Order I reduce
the number to about 100 - And lastly by carrying
on

on my investigation of the Genus, and discovering it; I have now, perhaps, only ten Species to search among for my Plant; and by examining the dis-criptions or Specific differences of these, I presently see what it is. But if it is what Authors call a non-descript, I soon find this also; and am the bet-ter, as I can now add a Species to the plants already known, and also distinguish it from them.

But in Quadrupeds there is not so great a variety as in plants, and therefore there is not so great a necessity for method in distinguishing them; for there are not as yet discovered in the whole face of the Earth above 200 Species of Quadrupeds. Mr Buffon therefore rails at the introduction of method, and says that Linnaeus work, by which he has got much reputation, is altogether trifling, useless, and Pedantic; for the human mind could easily contain so small a number of Species without the assistance of method. But I insist that even here method is useful, so far as it makes us more accurate in our distinc-tions. According we have at present a dispute prevailing, whether the Elk is a ruminating animal, and whether Caruncula Gutteralis is a marsh by which it may be dis-tinguished; which would never have been a dispute, nor could our distinctions have been so accurate, if we had never

Intro

introduced method in this part of Natural History -
I shall here add one more Observation on this subject. Many persons make a subtile objection to method, and say that it can apply to animals and Vegetables only; or such of the productions of Nature as live and propagate their Species; But that it must not be applied to Minerals. This Observation, or rather Objection, is of too subtile a nature to be disputed here, as it would require a more thorough knowledge of natural bodies than at present I can suppose you to have; therefore, I shall only say concerning it, that our distinctions even of Minerals have been much more accurate since method was introduced to assist us in distinguishing them.

In like manner, with regard to diseases, I will not speak so confidently of their uniformity and steadiness as Dr Gaubius does, yet I will assert, that method has been highly useful in making our distinctions of them more accurate and precise -

For this purpose, then, I have here given you four different methods, which are proposed with this view - I dare say, that at present, then, to many of you, will be as uncouth and unintelligible as the Figures in Euclid would be to a Girl. But though they may appear so at present do not be afraid; for by diligent Perusal and strict attention, we shall certainly be able to understand them at last -

If Gentlemen are in too great an hurry, and proceed faster than they ought, they will probably go into considerable

Error

Error: But as we proceed gradually from one thing to another, there is no danger but that in due time we shall come to understand both the nature and utility of a system in this Place -

Having given you a general Idea of Method, I am now to proceed to the Consideration of Nosology in particular - For this purpose I have given you four systems of Methodical Nosology, each of which I would have you consider separately by Study - I would have you first consider the Classes of each system separately - Then the Orders - and afterwards compare the four together, i.e. the Classes of one system to the Classes of the other; and the Orders to the Orders -

I have in the fourth part, which is my own System, given you the Synonimies of all the other three, annexed to the Terms which I have used - Where you see no Synonimies used, you are to understand that there are no terms to be found in any of the other systems which answer to the one I have used; and that neither of the three Authors, used any terms a synonimous sense, but that each member of our System is altogether new and introduced by myself - Thus in the second Class, Neuroses, there are no Synonimi annexed, because neither of these authors have used any term of the same signification - I indeed have given as a Synonime the term Nervini, which occurs in Linnaeus; Or I might have used it instead of the one I have chosen,

but

but I did not for fear of confounding my meaning with the Common idea of Nervous fevers. In most other places, however, of our system there are Synonimes. Thus in the order synonimous to Comata we have the Term Soporadi of Linnaus, &c. In the next place I give you the Synonimes of Stahl, Boerhaave and Hoffman, with references to their works, as I told you that these three systems of physic were that generally prevailed in Europe at present: and I imagine that will be of great use to you, as it will direct you to the chief reading on the several subjects that will be of use to you.

I shall make one more remark on this part of the work, with a view to correct any error that has crept through the whole of it, as to the References made to Linnaus's tables. I find, since the work has been printed off, that in these references there is generally an errour as to the number by which they are made. It was owing to there being two Editions of the Book, one having a single table more than the other, so that for the most there is an error in the references of one number too much.

In the Index I have given you all the names of the Genera that are used in either of the systems, with References made by the number of the Genus to the systems of Lavalleyes, Linnaus, Vogelius, and my own, which is the fourth part of the Work.

In

In numbering the Genera, every one except that of Savauges, begins but once; and that at the first Genus of the first Class, and proceeds on in the number to the end, so as to contain the whole of the Genera in one number. But Savauges begins his number a new at the beginning of every Class, so that he includes together the genera of one only - But for sake of convenience in my References, I have included all his genera in one number (as is done in the other systems), and have placed this on the Margin in the small Arabic Character opposite to his own number of the genera of the particular Class, which is expressed in the Roman numeral Character - By this Index you will at once see what place every name of a Genus has in each of the systems -

I now observe you that in using these systems, you are to pay particular attention to every thing you see in them; for there is not a word expressed that has not a particular meaning - And whenever you see a word left out by one Author, which is mentioned by another, you may be sure that it was because the latter had some particular view in it, which the other had not - And wherever one adds a word that is omitted, he certainly had some intention in doing it - Now it is your business in every case of this kind, where there is discrepity in the systems, to find out the reason of it - For Example Savauges and Linnaeus have divided the Class of Fevers into Intermittents, Remittents, and Continuedes - But in

Sogers

Vogel's system and my own you will find Fevers divided in to Intermittents and Continueds – Now the Remittents which have been so much taken notice of by authors, are certainly some where in Nature: what then has become of them and why are they omitted in these two systems? Vogel will tell you that no such thing really exists as a purely continued fever, but that they are all intermittent, and that there is no occasion for multiplying divisions – And if you look among the Intermittents of the fourth part you will find these mentioned as synonimes, not only the Remittents, but also the Remittents of Sauvages, and the Exacerbantes of Linnous; – the reason of which is that I consider the Remittents as Intermittents – To discuss this matter further would lead us to very intricate and important Pathological Enquiries, which are not to be entered on here

I must now dismiss the subject with a few Nosological Remarks –

First, in an attempt to Nosologia we ought to ascertain what are to be taken in as Genera of diseases. For my part, I think whatever can be properly considered as disease should be taken in – Several Pathological writers, as Sydenham, Morton, Hoffman, Pringle, &c have given us excellent Characters of Certain Diseases, but, as I told you, they have touched a few particulars only; there

as

Whereas we want the same light thrown upon all diseases, to enable us to form a system that will comprehend the whole, and give distinct Characters of them all - To give an Example - The Naturalists in the division of Quadrupeds, have given an order of Pecora - Now if we were acquainted with the Animals of Europe only, we might characterize these by their having horns (as was actually once done): But after we became acquainted with the Animals of Africa and Asia, here we find the Camel and the Musk-Deer, which have no horns, but agree in all other respects with the Pecora of Europe, and are therefore without any scruple included in the order amongst them - Hence, then, it appears that we cannot give the character of particulars with accuracy, till we are acquainted with the whole - and therefore we ought to ascertain what are to be taken into our system before we proceed - In a Nosological system none but what are proper diseases should be taken in - and it will be found that almost all Vogels numerous class of Deformities, are not diseases properly speaking; for he includes here every deviation from the most exact standard of perfection in the human body - But most of these, though they are imperfections, and give some slight inconvenience, are not to be recorded as diseases; or, at least, if they are so they are of a very slight kind, and such as may very well be omitted from a System - Savauges and Linnæus have

also

also, as well as Vogel, in like manner for the definition of Disease, and gone into the same error.

Moreover, all three of them have needlessly multiplied the number of genera, in reckoning as diseases what ought only to be considered as symptoms. Indeed each of their Systems is more properly a perfect Symptomatologia than a System of Nosologia. For Example, the Purpura, Rigor, and 50 or 100 more of their Genera never occur as diseases by themselves, but are only Symptoms, belonging to other diseases, as fevers, &c. Therefore all such should be leave out of the number of Genera.

Wherever it is necessary to give a Discussion concerning any point that admits of doubt, with as to ascertain whether a Genus is to be omitted or received in our System, I have introduced a note to that purpose, to signify that such a discussion is necessary. Thus in Page 257. with regard to the Hectic, I have said "Hecticam omnem symptomaticam censemus," by which I mean that I do not look upon the Hectic as a proper Genus, and shall give a discussion with regard to it hereafter. The same thing you will see in Page 270. of the Purpura of Savauges and Petechiæ of Linnæus, at the end of the Exanthemata. also of the Hemorrhagiæ, Page 272; and elsewhere near the end of 275, 276, at the end of 283, and lastly in Page 286. Here however it is put with some difference, I say "Vel Species vel omnino symptomatica est, Meteorismus, Savauges.

I shall hereafter discuss these Pathological Questions fully, and give the reason why those which I have mentioned are not admitted as genera. I must observe too that after two very remarkable genera, the Dyspepsia and Hypochondriasis, Page 276, I once had resolved to set down a list of a number of symptoms, that are reckoned by others as Species, but which I look upon as symptoms of the Disease.

I here go further, and remark that in Nosology even the distinction of genera and Species is often a matter of some nicety; to nice to be discussed here. However on this I have often hazarded my Opinion. Thus in Page 273. see the Synonimes of the Tertiana. Here many which Sauvages and the rest have made separate Genera, I reckon Species of the Tertiana. such as the Duplicana of Linnaeus Tretaophya of Sauvages, Tertiana duplex of Vogel. &c

I go on to remark that I consider as other fault of these authors in reckoning these Genera. There are some diseases that consist of a series of Circumstances, one state being the Consequence of another, and never occuring unless this other has preceded, as in the Case of Inflamation and abscess. then one succeeds the other, and it is a question whether they are to be considered as separate Genera. In a practical course, such as ours, we are under the necessity of considering them together; for in the way of treating them they cannot be separated. But see, in Page 257 of the Synopsis, how

we

we have managed them - Here I say "Phlegmones sequelæ sunt apostemata," &c. reckoning these cases under the name of sequelæ or consequences of certain diseases - You will see the same thing in Peripneumonia and Pleuritis Page 261 - And besides these, in 271. I have said under Hæmoptysis "Hæmoptysis sequelæ Phthisis," & which I have given no other place than this in my System -

These Authors have also reckoned several genera that have never been properly distinguished, but are only theoretical or imaginary - Of such there are many instances to be found in their systems; and Vogel in his Pancreatica (Genus 61) though he can give no character, but is obliged to say "Notæ deficiunt," yet admits it as a Genus: and there are many others, to be found in every one of these three systems, that have se no better distinguished -

Thus in my system I have given so many fewer Genera than either of the other; for you will find that Vogel has given 560, and Savanges and Linnæus upwards of 300 genera; whereas in all I have but 132, and yet have taken in almost all that they do, either synonimes or sequelæ, &c - and in this we see a very essential use of our Index, viz. to show which of their genera I have received, and how far I have placed them in the 4th part: in short, to show at once under the name of each Genus, how the four different systems stand with respect to one another -

I am

I am sorry to detain you from the business of more immediate use and application, I mean the consideration of particular diseases - I have thought it proper to engage you in the study of Nosology; and want especially to inculcate that all questions that occur in the methodical Nosology are actually Pathological Questions of considerable importance - and therefore the most part would not be made questions, if it were not with a view to method - Such were several of the Inquiries we hinted at yesterday, as

I. What among fevers were to be admitted as Genera, and what to be reckoned only as symptoms of them.

II. What in many cases are to be enumerated as symptoms, and what may be looked upon to constitute a species -

III. What are to be reckoned as Genera, what as species - Also What distinction to be made between the different stages of diseases - be - and in the next place, in what manner the Characters of diseases are to be made out in a system of methodical Nosology - Here, I say, no theory is to be admitted - and a work of that sort is valuable, because it consists of nothing but a Collection of medical facts - Now we Sauvages order of Phymata, Page 4th, where he admits into the Character the term humorales; and also his Cyanosis centrica, Page 6th, in Characterizing which he says "a solidis adauctis" - This, I say, is Theory and consequently not to be admitted; for he has here taken into the Character the internal state of the parts, and even gone so far as to ascertain the state of the Vessels there - Also Linnaus is guilty of the same fault, in page

146 – there he calls Schirrhus; Glandula indurata; and Anchylosis (Gen. 286.) Tumor Genicularum, &c Synovia – Now both these are even doubtful pieces of Theory, and at any rate ought by no means to be admitted in Nosology – Sec like-wise page 144. Here you will observe his theory also wrong. For in the Character of Bubo, he says "Glandulla Conglomerata." and in Anthrax "Glandula Subcutanea," therefore in this instance he has falleninto a very palpable error – But such Theory, even if just, ought not to be admitted – Also in Page 120. his Character of Agrypnia is very improper, and does not even give an Idea of the affection; for it were not that we understood the Greek term, or the Latin one, pervigilium, which he annexes, I am sure we should not from the Character he gives know what he meant – Further Linnaeus distinction of the Inflamation of the Meninges, and of the Encephalon into his Phrenetis and Spasmus (vide his Phlogistici) is very improper and incorrect, for the same reason, being a distinction in Theory only – For, see page 170 where Vogel unites the two together in his Phrenitis (see the Character) – Here he says that the distinguishing symptoms are very ambiguous; and if so when both are united, the distinguishing Marks will be much more ambiguous when we attempt to make two Genera out of them – Also in his Hepatitis and Splenitis, &c, the Characters are very imperfect; for these cannot be distinguished by saying there is a pain in the right or left hypochondrium – for in very many Cases even this cannot be accurately distinguished – and I have often seen the

the pain judged in one or other of the Hypochondria, and the disease referred to one or other of them, when it was situated in the Colon & Therefore it is not altogether excusable to characterize even by these, much less when he says "Dolor "Uteri, Dolor Renis, &c," specifying the particular viscus -

There are other Cases where our Characters are exceptionable through necessity, viz, Where diseases consist of a series of Circumstances, and we cannot distinguish them by a Character which is constant and runs through the whole disease - As in Intermittent fevers, where we cannot Characterize them till we have seen a repetition of the fit - In the Exanthemata, where must wait for the Eruption - &c - For altho in the Exanthemata certain Circumstances often give a strong Presumption as to what the disease is to turn out, yet we have not marks so absolutely certain as to enable us to establish their Character in the beginning of the disease. Here, then, we cannot Characterize the Genus before we have seen some of the Progress of it - This, however is to be avoided as much as possible - But altho in some cases this is an unavoidable imperfection in our Nosology, yet it is not always so where it occurs in these Authors & Thus we have among the Characters given by them "Febris "Velocissima &c" - Where the disease is distinguished only by the violence or Fatality of it - Marks which can be seen only after the patient is dead - But Linnaeus

through

through almost the whole of his Fevers (Page 100) has expressly given down-right Distinctions of the sort, which respect only the Termination of the disease: Thus he says "intra Septimam "Unicam terminanda &c" – Savauges also has often fallen into the same error (Page 22).

I say, then, that diseases are to be characterized only by the Evident external appearances; and in this so we ought to use such expressions as admit of no Ambiguity – Therefore we object to Vogels "Voluptas dolorifica" and Linnaeus' Character of the Contersura (Gen. 238.), as being examples of this – Linnaeus, However, to avoid in some measure this Ambiguity of Expression, has by numbers reffered to his definitions of his Terms, i.e, the names of his Genera which he makes use of in Characterizing others. Thus in his first Genus Morta he refers to his definition of Phlyctena in Gen. 273. But there is great ambiguity in the Expressions through out the whole of these three systems – And, indeed in Nosologia, nothing is more wanting than a proper Delineatio Morbi. Every one acquainted with Botany knows the great use of Linnaeus's Philosophia Botanica, in which he explains all the Terms, and so gives some precision to the Language of the Science –

I go on to observe, that in ascertaining our Genera, Orders, &c, Natural Affinities between the particulars

belong

belonging to the same Apartment, are to be sought after as much as
much as possible; and all artificial affinities as diligently avoided.
Every one sees the use of this in Botany – This indeed is a thing dif-
-ficult in Nosologia; but hitherto it has not been much attended to.
Thus we find in Systems of these Authors the Class Dolores, which
is entirely an artificial Class, and is Characterized by one symptom
only – It was indeed their aim, and have pretended to, to exclude from
it Inflamatory pain; but have not been able to do it; for
they have taken into it Arthritis, Ophthalmia, &c. Hence
appears the Impropriety of it – But I could go on further, and
show that the Term Dolor is also a very ambiguous one, and
that as they have managed it, they make it to comprehend
every uneasy and painful sensation the body is liable to – I have
therefore, very properly, I think, avoided this Class – at the
same time I am ready own that my Class Locales is as arti-
-ficial (with respect to the Class) as any of them; but it becomes
better when we proceed to the Orders: and this fault is always
greater as it more or less affects the lower Apartments or mem-
-bers of the Division; for if a natural affinity is observed
between the particulars arranged together, it is not much
matter though the Connexion between the parts of a more
general division, or the higher apartments be some what
artificial.

I have to add with regard to the Characters, that
nothing superfluous is to be admitted into them; neither
should they be deficient; but the full Character

Said

laid down concisely - as an Example of this fault, in Sauvages Character of Phlegmone (Gen. 15.) there "Spheroidea" "A ponte in supperationem vergens" is superfluous - the intent means by it means to distinguish the Phlegmone from the Furuncular, which he makes of the size of a Pigeons - But these are both superfluous Circumstances - In like manner Sauvages in his Character of Fistula (Gen. 74.) makes particular mention of it reaching the Bone, which is altogether an superfluous - And no Practitioner would require this Circumstance to Characterize it. - Also in Linnaeus Character of Syphilis (Gen. 6.), and in Vogels Pestilentialis (Gen. 33.) you will see other instances of superfluous Characters - Sauvages Character of his Oschocele (Gen. 41.) "Cystis in Scrotoo" gives no Idea of it - Further his Character of the Order of Ectopia (Page 9th) is improper - Indeed I do not like the terme, though I have myself made use of the same - But the reason was because, at present, I could not find out a better -

Next for Example of Deficiency of Character see the Miliaris of Sauvages (Gen. 93.) - Besides which there are many others, where the fault is suffi-ciently obvious - Lastly take for Examples of deficient Characters the Gonorrhoea of Sauvages (Gen. 268.) and of Linnaeus (Gen. 200.) - But in general the fault is the other way; and you will find for the most part a proneness for superfluity in Characters and Descriptions.

As to the subject of Denomination or Nomenclature, I refer you for a general Idea of it to the Physica Botanica of Linnæus — and with regard to Physic look into the Prolegomina of Sauvages — In a word, I think that some regard ought certainly to be paid to the Nomenclature, i.e. we ought to make choice of proper terms: But it should be a rule to change as few old names as possible, and invent few new ones — Yet it is necessary where we change the idea to change the name also; and this can never be found fault with! — But I am ashamed here to observe what Pedantry our three Authors have been guilty of in this respect, and how ridiculously vain they are in endeavouring all they can to multiply the number of strange Terms, making Genera of Symptoms &c, particularly Dr Vogel, who is really wanton in this respect, in so much that every time I think of him it puts me in mind of Bouleau's Petant &c —

This finishes the whole of the Preliminaries, which I meant to give previous to entering upon the proper business of our Course. Whenever you enter upon the study of Nosology you will find it requires some labour and attention, before you can make any progress in it; and till you have some Experience in it you will not be able to see its application and utility.

I am, then, to enter more particularly into what

you

you find in the 4th part of our Synopsis – Here I have just made an imaginary division of all Diseases into two Heads, The Universal and Local – the former of which Comprehends the three first Classes, and the rest to the latter – I mean by the Universal Diseases such as affect the fundamental and primary Functions of the Body, in which we include fever, which principally affects the Sanguiferous System, as being therefore a Universal disease; and the Apoplexia, which is an affection of the Brain in particular, but the functions of the Brain are amongst the most important and fundamental of the whole Body. Nay, we go further and include under this head any Topical Inflamation, which more generally affects the Sanguiferous system, as being, therefore, an Universal disease. But I am not very anxious as to establishing this division. And I observe that but few systems can give such a thing as is called a Clavis Classium – Sauvages and Vogel, you see, have given none, though Linnæus has – However ours, in which there are so few Classes, would admit one more readily –

As to the Characters, I think they are sufficiently obvious: but at any rate the particular discussion of each of them will come in better in an other place.

With

With regard to the three Classes of Universal diseases, I shall lay before you what gave me the hint to make such a general division of them -

You know that Pathologists divide the functions of the body into three heads, the Vital, Animal, and natural; and this in Pathology gives a like division of the Functiones Læsæ - Now under our head of universal diseases, I would allot a Class to comprehend the affections of each of these sets of functions - And thus our first Class, Pyrexiæ, answers pretty exactly to the vital functions, and so does our second, Neuroses, to the Animal - However, neither of our three Classes answers perfectly, I mean, are not quite perfect in this respect, or properly united and comprehended with regard to these separate sets of Functions, so that each may exactly comprehend each respectively, especially the third Class, Cachexiæ, which should comprehend the affections of the natural Functions - But here it is impossible to make it accurate - The function of Nutrition, which is principally concerned in this Class, will in some measure enter into the rest and run through the whole ... This, then, is the foundation upon which I proceed in forming this part of my system, viz, establishing these three Classes of Universal diseases; and altho it is not quite accurate, I thought it necessary to throw out this hint for your own consideration.

But

But to come nearer — The system I have delivered in the 4th part of the Synopsis is exactly to be the plan of our course — By it you will always be able to follow me, and know what is to come next. I shall be glad to find you already acquainted in some measure with the systems, as that will enable you to follow me with more advantage; for I am obliged, you will see frequently, to compare the other systems with mine.

I think the order of our system is preferable to that of others, as it begins in the most common and convenient method. Thus you will easily perceive that I could not begin with the Vitia of Sauvages, being so numerous, mostly Chirurgical & of little importance, and many of them not admitted into my system, though, upon a certain occasion, he calls them the Elementa Morborum, but require some thing else to be premised. Neither could I begin with Lannaeus Exanthemata, before giving the general doctrine of fever &c.

Having, then, given the order of our course, I now enter on our first Class,

Cl. I. Pyrexia.

(Character. Post horrorem pulsus frequens, viribus artuum imminutis)

imminutis) This altogether a natural class. I might now enter into a discussion of the character of the class, but I choose rather to give a general history of Pyrexia; and in doing this I shall chiefly attend to the first and principal order, of Febres, to which term, you will see, I have applied a more limited sense than usual; for hitherto the terms Pyrexia and Febris have been used as synonimous — I shall give this general history of Pyrexia, as it is best exemplified in the Paroxysm of an Intermittent, the history of which will apply pretty well to the class — and the method in which I give this history of a single Paroxysm of an Intermittent, I intend as a model (and you are to take it as such) of the manner in which I shall relate the history of every disease through this Course.

I say, then, that the Paroxysm of an Intermittent comes on with a sense of Lassitude, consisting of a sluggishness and aversion to motion with debility — This is accompanied with Pandiculatio, or Yawning involuntarily, paleness of the Skin (the veins disappearing on the surface) especially in the extreme parts, the tip of the nose, and the Nails. The bulk of the Body is now sensibly diminished, the Face suffers a Collapse, and Rings which before were sufficiently small, now drop from the Fingers — &c. Now the Skin is dry, the Papillæ (from

whence

whence the hairs grow) become more eminent and remarkable, in so much that from the similitude, they have in several Languages got the name of Goosesskin - With these, or soon after, a sense of cold comes on, commonly felt first in the feet and back, with a sensibility to external cold - whence the patient desires to keep himself covered, or hovering over the fire - This, beginning in the feet, spreads from thence through the whole body, with a sense of creeping, especially along the back, where there is sensation similar to that of pouring cold water upon the Part, frequently preceding, as it were, with Rushings over the whole body - This brings on a Tremor, affecting all the Organs of Voluntary motion, but more especially those that are not well balanced and supported, as the Lower Jaw - along with this, frequent Rigors or sudden Convulsions of the whole body - And now an actual or real Cold comes on, which is sensible to the touch, whereas the cold before mentioned was felt by the Patient only - Next transient fits, of flushings of heat and cold alternating, come on, till at length the heat prevails, and after some time extends itself perfectly and permanently over the whole body - With this the colour and fullness of the Skin return. These and the heat are for sometime attended with a dryness of the Skin, but afterwards some moisture appears, terminating at last in a profuse and Universal sweat, with which

which the heat and other symptoms gradually recede and become less, till at last the returns again to its natural state.

This, then, is the general and most ardent series of Phenomena that occurs in a Paroxysm of a common Intermittent, and which characterizes the general name fever. You will observe that in the above relation I have chosen the manifest appearances only, which are more especially perceived by the Patient himself, or are evident to the Bystanders.

But there are many others which are to be remarked by the Physician. And these I shall now proceed to relate. But before we do this it is necessary to establish a certain Order.

Physicians have divided the Series of Symptoms occurring in a Paroxysm of an intermittent, into Three Stages. What Dr Sydenham calls the Tempora Ephorrescentiæ Ebullitionis, et Despumationis. or what in English we name the Cold fit, Hot fit, and sweat, or sweating fit.

I shall proceed to give the other Phenomena, as they respect each of these Stages, and shall begin with the Pulse.

This, at the coming on of the cold fit, is weak, small and frequent. as the Cold fit advances, it becomes

irregular, weaker, and Intermitting - When the Tremor comes on it becomes stronger, and is somewhat more regular - As the heat prevails it grows stronger, and soon quite re-gular, though it is yet small and contracted - But with the Eruption of the sweat it becomes fuller and softer, till at last it subsides entirely, and becomes natural -

2. Respiration. In the cold fit is small and difficult - When the hot fit comes on, it becomes larger and more easy - Till at last, with the sweat, it is quite easy, and at the same time less frequent - In short the respiration undergoes the same Vicissitudes and keeps exact pace with the Pulse - At the same time there is an anxiety attending it, which depends on the difficulty of Respiration, and consequently varies exactly with it in the different Stages.

3. But besides this there is another anxiety depending on the State of the Stomach - With regard to this we generally observe in the beginning of the Cold fit an aversion to all Ingesta, and such things as at other times would be agreeable, as snuff and Tobacco, &c - This proceeds to Nausea, and at last Vomitting, and the matter ejected is generally Bilious - The Nausea is most troublesome in the height of the Cold fit, but is always suspended for a time by the Exertion in a fit of Vomiting; as it is the effect of every fit of Vomiting to diffuse some glow over the skin - When the hot fit comes on the Nausea begins to go off - and with

with the sweat quite disappears -

4. Next let us view the Secretions - In the Cold fit there is a dryness of the Skin, with Thirst, which accompanies, however, both the Cold and hot fit - But in the Cold fit it arises from a sense of Clamminess in the mouth, and in the hot from a sense of heat -

5. Also with regard to another particular Secretion, the Urine; if any is voided in the Cold fit, it is pale and Crude; in the hot fit it becomes high colored, and in the sweat deposits, for the most part, a copious Lateritious sediment.

6. Stools rarely occur in the Paroxysm, but when they do it is in the Sweat.

7. Any morbid Tumors (" and perhaps Ulcers) that are about the body, suffer during the Cold fit a Detumescence, and that sometimes in such a manner as never to return, but for the most part, the determination being particularly to the surface, they are restored and even enlarged in the Hot fit - Also Running Ulcers in the cold fit become dry, but in the hot fit are restored with an increased discharge.

8. Besides these Symptoms, along with the Cold fit, a headach generally comes on, which continues, and goes off entirely only with the Sweat - Other pains, as those of the Back, accompany this period.

9.

9. In the cold fit there is also a great insensibility - This is sometimes so remarkable that Persons have had their feet burnt without knowing it - But in the hot fit this is succeeded by an encreased sensibility, which is particularly observed with regard to light and noise, the usual impressions of which now give so great a stimulus as not to be easily endured -

Next with regard to the Intellectual Functions

1. In the cold fit a difficulty of attention and a confusion of thought frequently come on and proceed sometimes to delirium. These continue in the Hot fit, and at last go off with the Sweat - There is also so great a degree of stupor that the Patient is sometimes Comatous - There is likewise in the cold fit frequently a great variety of Spasmodic Convulsive motions excited in the System, along with Tremors, &c -

These in general are the Phenomena that occur in the Paroxysm of an Intermittent. But I do not mean that every Intermittent gives exactly this Series; for, on the Contrary, we shall find, that there is in them a considerable variety -

The Paroxysms of Intermittents have various lengths, from five to twenty hours - Vogel says, says to eighteen, but Tissot to give greater latitude, and

I hope with some propriety - as while the whole fit occupies in different instances different spaces of time, the different parts of the same fit (as before distinguished) occupy different portions of this time - sometimes a hot fit is resolved without any sweat following, and in like manner a cold fit is sometime not followed by a hot one; for it is indeed a fact, that no Patient ever dies in the Paroxysm of an Intermittent after the hot fit is formed, but before, in the cold - some will dispute this point with me, but it is a fact

The subject of fever, which we have begun, from its frequency and Fatality, is not only the first but also the most Important part of our business -

I have begun with the history of a Paroxysm of an Intermittent, by which I give an Idea of every Instance of fever in general - But it is to be Observed that hardly any fever goes off with only one such Paroxysm; but after a certain space called the Intermission or Apyrexia, the same series of Phenomena begin a new, and run through the same course: Now, this space of time in which there is an entire apyrexia, or from the end of one Paroxysm to the beginning of the next, is called the Intermission - and the whole space of a period, or from the beginning of one paroxysm to the beginning of another, is called the Interval - The most common interval is that of

48.

48 hours, which is called Tertian; and this is so universal, that I believe of ten Intermittents that occur, nine of them are of this type - The next most common Interval is that of 72 hours, called the Quartan - Others have been observed, as especially an Interval of 24 hours, or the Quotidian. And besides these Authors have remarked some that are shorter even than the Quotidian - But I hardly consider these as giving different Species of Diseases, but rather look upon them as Anomalies of the others -

The duration of the Paroxysms of Intermittents is from 5. to 18. or 20. hours; and none are observed to last longer than this - But there are Paroxysms of Fever which do not come to an Intermission in 24 hours, yet though the hot and sweating fit do not entirely go off, they will always in this period suffer a Remission or abatement of their Violence; and when the Remission is without sweat, and the returning Paroxysm not accompanied with cold, the next Paroxysm at the end of 24 hours is called an Accession - And the Fever consisting of such, is called by Authors a Remittent, or by Linnaeus Febris Exacerbans - In these the Remission is marked with a sweat, and the Accession or Periodical return of the Fever, by a return of the cold fit - But when the Remission is without, and the ensuing paroxysm without Cold, the fever is Continued.

When

When ~~then~~ These Circumstances of the Periodical return of sweat and Cold Fit are not noted, and the fever has scarce any remission, and the returning Paroxysms are distinguished by some increase of hot fit only, this is called a **Continued Fever**. This has gone so far that many Physicians have thought that there are two fevers, consisting of but one continued Paroxysm, which they run through with Uniformity from beginning to end. All I shall say in Opposition to this Opinion is, that through the whole of my Practice, I have never met with any such fever.

Now with regard to the Proposition of the lenght of the Intermission and the Duration of the Paroxysm. In all Intermittents, the longer the Interval the shorter the paroxysm. Thus a Quartan, which has the longest Interval, is the shortest Paroxysm and longest Intermission. The Paroxysm of a Tertian is somewhat longer; and a Quotidian has still a longer Paroxysm with a shorter Intermission. So that a Quotidian sometimes having the Paroxysm protracted to twenty four hours, becomes an **Remittent**, and that frequently of the most continued kind. It appears, then, that all fevers have a considerable affinity to one another. And therefore I have taken a Paroxysm of an Intermittent, as a proper example of the whole. The Symptoms of which I

have

have drawn up with as much Care and accuracy as possible. But least you be not contented with what I have given, I shall refer you to the principal Authors on this subject, in order that you may consult them at leisure.

First, then, in Boerhaaves Aph. 749. and the following, you will find the history of Intermittents well delivered. Though he says little relative of much value on this subject. Consult also Dr Hoffmans writings on this subject, in which you will find many Curious and useful things. Also Cleghorns on the diseases of Minorca. And a Book entitled "De Recondita Febrium Intermittentium Natura" to which the Author has not put his name, but it is ascribed by every one, and that with Pretty good certainty, to Mr Vendel, first Physician to the King of France.

Having now enumerated the Phenomena I shall next, before I proceed to the third head, under which I intend to distinguish the Species, attempt the Investigation of the Proximate Causes of fever. Here I shall enter on what you will call Theory, and therefore, perhaps, object against it. Unto those who are disgusted with the name, and will look upon what I am entering upon as an interruption, I can but promise they shall suffer this Interruption for a few days only. And can tell others that they have no reason to be scared at it, whatever Idea they may at

present

present entertain of it. For my Part I consider the whole of my reasonings and proceedings in this matter only as an enumeration of Facts and establishment of them - Philosophers in general do not pretend to explain the manner of Connexion between Cause and Effect, to show how the one comes to follow the other; but only endeavour to establish their necessary Connexion as a Fact - By this manner of reasoning, then, rejecting every thing, I shall advance on Facts what I propose to offer on the Investigation of the Proximate Causes of Fever ---
..... My order in every disease shall be

1. Definition.
2. Description or History.
3. Proximate Causes, to assist in
4. Genera and Species.
5. Remote Causes.
6. Prognosis.
7. Method of Cure.

III. Proximate Causes.

This indeed is among the most difficult Problems in Physic, and one which has hitherto baffled the attempts of all Physicians - I do not expect to explicate it

it in such a manner that there will remain no defects and objections to it; but hope I shall be able to bring the matter somewhat nearer to truth, and to point out the method most proper for prosecuting it further. We shall also by my attempts get rid of a great deal of false Theory that has been introduced on the subject of fever.

I first observe, then, that the Phenomena of fever are very various; but as they in general succeed one another in a series with some regularity and constancy, there is a strong presumption that they depend upon one another as cause and effect, and that the whole series arises from one common cause. At the same time I do not deny that the cause of fever may be often of a compound nature, and that some Phenomena that occur may be owing to the action of accidental causes, and are not at all the effect of the common cause. But I presume that there is one common simple cause, upon which the most general and steady Phenomena of fever depend. This is what it is our business principally to inquire after.

I am now, then, to investigate this common cause of the variety of the Phenomena of fever. And here in the first place we agree with all Physiologists that the Phenomena in this series succeed one another as cause and effect. Next I assert also what they have agreed on, that frequency of the Pulse is the leading symptom of fever, and that the increased action of the heart and Arteries is the part of the series of Phenom-

-ena

Phenomena which is to be looked upon as the fever — Now in searching for the Cause of this, what first occurs to us is a direct Stimulus applied to the heart and Arteries (You know what I mean by a direct Stimulus). This, then, is what would immediately occur to us, on viewing only the hot fit of fever, or the increased action of the Heart and Arteries — Accordingly a Direct Stimulus of this sort has been hitherto generally admitted as the Cause of Fever — But on supposing this at once a Difficulty occurs, viz, that very often direct Stimuli are applied, and do increase the action of the heart and Arteries, and yet do not produce fever; for no disease in such Case is said to be present — This is the effect of Exercise, Wine, Exposition to heat, &c — Therefore every body allows that the increased action of the Heart and Arteries alone does not constitute Fever, but that other Circumstances besides this must attend before a Fever can be said to be present — What these other Circumstances are is not, however, so well agreed — I think the most Universal Circumstances should be taken in, and we should say, an increased action of the Heart and Arteries following a Cold fit constitutes a fever — This then being established, in fact, till further discovery, what we took up before, viz, the notion of the hot fit of fever being owing owing to a direct Stimulus — This however is the Opinion generally prevailing, and which is in the mouths of above

two

two thirds of the Physicians of the present age — How upon these Principles is the hot fit produced from the Cold one which precedes it? — I think it necessary to enter somewhat deeper into a Doctrine that is so general; and however absurd it be, it is necessary that you be acquainted with it —

Let us see then how Dr Boerhaave proceeds in this matter (vid. aph. 577.). Here he admits a compound Cause acting, and says that one part of the Circumstances of the Cold fit is at the same time giving a direct Stimulus to the heart and Arteries — Further (vid. aph. 581. and the following) his last words are "Unoque nato, facile alterum requitur" — there is an obvious Embarrasment in his Doctrine — In this place the first question to be determined should be, which of these two states in fever precedes the other? for that which precedes must be looked upon as the Cause of the other: But neither he, nor his Commentator Van Sweiten, have entered into this Question. (Vid. aph. 586.) — Here Dr Boerhaave enumerates a great variety of direct Stimuli, which he seems here to look upon as the primary Causes of fever — But neither he nor Van Sweiten for him explained how these Causes (586) produce the Cold fit; for they are all direct Stimuli acting on the heart and Arteries (see again Aph. 582. with the Commentary.) But observe that in the Series of Phenomena or Facts, that which

That which comes first is the cause of what follows - Thus the Cold fit, which always precedes, is the Cause of the hot fit - Therefore it appears that Dr Boerhaave and his followers are very much perplexed here, and have got on a very wrong footing -

I assume it, then, as a Fundamental Proposition, that the Causes of fever operate in producing the Cold fit; and that this again produces the encreased action of the heart and arteries - The nature of the Remote Causes will also be found to agree with this Proposition, and to tend to support it - But I infer that the Cold fit of fever is the Cause of the hot fit, from the Universality of the Succession, as they occur in fact: To prove which I use the Testimony of Dr Hoffman (Vol. 1. Pag. 35.) - This I hope will be strongly supported by the Explanation we shall give of the Proximate Causes -

(I shall here supply an Omission I was guilty of formerly, when speaking of my References in the Synopsis. Those made to Dr Hoffmans works do not respect his Med. Rational. Systemat. as divided into Volumes, and first Published by himself: But my references are made to his whole works, as Published altogether in the last Edition (that of Geneva) and distributed and bound in six Volumes Fol. - One of which contains 3 or 4 Tomes, as they were first divided by the author)

He very strongly asserts the Universality of a Cold fit preceding the hot one - Nothing is more

necessary

necessary in reading Boerhaave and Van Swieten than to observe a particular inconsistency in their Writings on this subject - (in Aph 756.) Here he calls the Cold fit the Prima causa, and says if we obviate this, the whole of the subsequent is prevented - His Commentator gives an Explanation of this - And upon the whole I think if there is any doubt remaining, but that Dr Boerhaave and Van Swieten were of the same Opinion, with regard to the Proposition we are maintaining, as we are, it must be this - That they are explicit only as to the Cold fit being the cause of the hot fit in the case of Intermittents - But we shall find that what is admitted as the Cause of the hot fit in Intermittents, will also apply in general to other fevers. Therefore we take it for granted, and deem it matter established in fact, that the Cold fit is universally the cause of the hot - and that the Cause of fever, in all cases, is to sought for in the Cause of the Cold Fit.

In enquiring into the Causes of the cold fit of fevers, Bellini universally, and Boerhaave in his early Editions, supposed fever was owing to a Lentor or Viscosity of the Blood - Boerhaave seems to have perceived the Imperfection, and accordingly in his last Editions of his Aphorisms, he refers it to an Inertia liquidi Nervosi - and Van Swieten in his Commentaries on this imputes entirely to an affection of the Nervous System, rejecting the state of the

blood

blood - Moreover Dr Whytt, who, I know, was once of a different Opinion, expresses himself in his Book upon Nervous Disorders to the same purpose, viz, that "the cold and shivering which occur in the beginning of most fevers and Inflammations, do not seem to be owing to a stagnation in the extreme vessels, but to a spasmodic constriction of these Vessels." The cold fit, then, is an affection of the Nervous system - and you are to look for the Cause of fever in the cause of the Cold fit -

Different Authors have searched for this in different Ways - Hippocrates attended by little to this, or to the moving powers of the System in general - The Galenists looked for it in the Qualities of the fluids, though they supposed an active power in the System, which excited the febrile motions immediately; yet they always searched for the Remote Causes, which acted on this principle, in the Qualities of the fluids. And this doctrine was implicitly followed by all Physicians till the 17th or 18th Century -

I proceed to enquire into the Cause of the leading Phenomena of Fever - This is an enquiry that has hitherto met with little success - I shall proceed in it with Caution, as they are connected with Circumstances, that are in a great measure complicated -

We must first enquire whether the Phenomena of fever depend on one common Cause, or on a Compound one - We suppose from the Universality and similar regular

Succession

succession of the Phenomena, that they depend on a com-mon Cause - The hot fit is the most evident and remark-able part of the Series of the Phenomena of Fever, and therefore it has been principally attended to, and conse-quently the Cause of it only enquired after -

The first thing that is suggested to us here, is a direct stimulus applied to the heart and Arteries, which accordingly is admitted by Dr Boerhaave as the Cause of Fever - At present, however, it is found necessary not to con-fine the Character of fever to the hot fit, but also to take in the Circumstances of the Cold fit, otherwise the Character will be very imperfect and inaccurate.

No one has yet been able to explain how a cold fit can be produced from the action of direct stimuli - We must therefore attempt another method.

I think we shall proceed better, meet with fewer difficulties, and come to a more successful Conclusion, if we consider the cold fit as the principal part of the Phenomena of fevers - and this, I think, we are led to by the state of the Facts ... From the Universality of the Cold fit, we Conclude that it is a principal part - and then as it is first in time, we infer also that it is first in the Series of Causes and Effects - You will believe this the more readily as I told you that Dr Boerhaave and his Commentator have both in a great measure come into the same ouini-on

Opinion, as you may see in their writings on this subject, particularly the Intermittent fever. In this they are explicit in giving their Opinion, that the Cold fit is the Cause of the hot. However Dr Boerhaave imputed the Cause of the Cold fit a Lentor of the blood* obstructing the extreme vessels. But I did not spend many words in refuting this Opinion, as it is now given up by the Boerhaavian school; for I shewed you that Van Sweiten imputed the cold fit entirely to an Impetum faciens, or nervous system. I also quoted something to the same purpose from Dr Whytt and Dr Hoffman, both of whom we found to agree in the same opinion; which in short is this, That the cold fit of fever is an affection of the Nervous system. Thus far I concluded yesterday. And this I look upon to be a Conclusion of very great Importance, and one which is connected with a great part of the principal Doctrines of our modern Pathology, not only with regard to fevers, but to other subjects in Physic.

But we are not to rush on from the matter in hand too quickly. I am always anxious to examine well, and discover with certainty the fallacies of old Doctrines

before

* Is not this an Opinion too general and severe? For Boerhaave seems to have had some notion, though an Imperfect one, of Spasms occuring in fevers. He generally indeed speaks of Lentor as the Cause of Obstruction; but

after

before we reject them; and also before we admit any thing new, to enquire strictly on what foundation it is built.

Before the time of Van Helmont Physicians only looked for the causes of diseases in the qualities of the fluids — and at this time it was held a general maxim that Diseases consisted in a certain temperies of the matter of the

afterwards use expressions that apply also to spasm — Thus (Aph. 581.) "Dilatior Cordis contractio cum aucta ad capillaria resistentia, Febris acuta Ideam absolvit." And as the remote causes of this Paroxysm, mentions Ingesta quæ Irritent, suffocent, obstruant, putrescant. (Aph. 583.) Again in the Cure of fevers, though his three Indications are to dissolve Lentor (598), he subdivides this (607 — 609.) into three numbers, the second of which is, "quod ibi (in emesparis) horror ad extrema capillaria ob febres horum spasmo contractas, et hinc arctatis solvitur Lasgatis febris, et acre contractiones causa ablata. He hints at the same distinction under under the Frigus febrile (621.), and under the Anxietas. (631.) He positively refers the difficult passage of the blood to a Spasmus Vasculorum Contractorum, and the materies Inflamata, or viscid blood — In (634.) he carefully separates the Indications

the Body – Thus fevers were imputed to heat – Van Helmont however advances that the motions of the System were more concerned, and ought to be more attended than the condition of the matter of the body – His system however was afterwards modified by his Disciple Dolaus – However along with this there were so many misterious and fanciful things in his system, and particular Doctrines, that it was not generally admitted, but rather despised by Physicians.

Dolaus defines fever to be an encreased velocity of the blood – And in this he was followed by Dr Boerhaave. But it is evident, if this were all that constituted fever, our Cure would be only to diminish the Velocity of the blood – Happy would it be for us if this were so; for certainly we have nothing more in our power than simply to diminish the velocity of the blood, by such applications as diminish the force of the moving powers of the Circulation. But Physicians well know the bad Consequences that are liable to ensue from the application of such direct means of diminishing the

Indications arising in these two Causes, and adapts his Remedies to each – In (72 D.) he says Ephemera Causas agnoscit solum motum vehementorum nec ullam materiam – Upon the whole, Boerhaave may be ranked among

the bloods velocity; and that on the Contrary we are often obliged to make use of such means in the Cure of Fevers as tend to increase it.

As to our present system Boerhaave and Bellini have the principal share in forming it. They apply their attention to the state of the fluids, and impute all to Lentor and Acrimony. Thus (aph. 698.) Dr Boerhaave in a few words gives the general Cure of fevers, which you observe consist chiefly in correcting acrimony, resolving Lentor, and lastly in expelling both. And this Doctrine of his was implicitly followed by almost all the Physicians among us, till very lately.

Dr Hoffman was the first who began to notice the motions of the System, as being principally concerned in diseases, and to take them more into his account. Him, therefore, I consider as the first, and the One who has the greatest honor in the reformation of our modern Pathology

among those, who under the influence of strong prejudices, yet from the nature of the thing and deficiency of their own Theory, have been obliged to admit Spasm as the Cause of Fever.

Pathology (vid his Medicina Rationalis Systematica Tom. II Part 1st Chap. 4. Sect. 8.) The sum and conclusion of which is, that the Phenomena of the System depend chiefly on the state of the motions of the System - (and Sect. 9. is entirely to our present purpose). Indeed this is so obvious that it is surprizing how Physicians did not see it long before - It is true that Willis, Hepper, Baglivi, Bellini and Morton made some small attempts towards it; But Hoffman was the first who attributed diseases principally to the state of the motions of the System - To speak more particularly, Dr Hoffman considered fever entirely as a change of motion in the Vascular system, and attributed it to a Spasmodic Constriction on the small vessels of the body - And his doctrine was, that however this Constriction was resolved, whether by Nature or Art, as soon as it was done the fever was cured - Hence in the Cure he attended to such remedies only as acted on the Nervous system - Though this doctrine does not explide the whole business, yet it goes a good way - Hoffman here could only establish general Facts, which also may often be our own case - Therefore I shall now make an apology for both Dr Hoffman and myself in this respect - and this I shall do in the Words of Van Swieten (Pag. 528.) "Symptomata quidem ..... ludere."

There

Therefore, from Dr Hoffmans being unable to go further, the Doctrines he advanced never were received till lately - But now Physicians in general at least allow that in fevers the nervous system is principally concerned - Even Dr Boerhaave in the last Edition of his Aphorisms is of the same opinion; for here besides his Viscositas Liquidi Arteriosi, he refers the Causes of Intermittent fevers also to an Inertia Liquidi Nervosi - (See also what Van Swieten says upon this subject in his Commentary to Aph. 755 --- Pag. 527.) Plura jam huic ..... Paroxysmos possa fuit, &c. Just his very arguments to prove the point in Question - He inculcates the same in other parts, and at last comes to a conclusion, Pag. 540. " Ex hactenus dictis &c." The sum and substance of which is shortly this, that the Fever is an affection of the Nervous system -

Thus we have examined the Progress of Opinions with respect to the subject at present in hand, and at last have come to this opn in the Boerhaavian school, and that established by the authority of one of the greatest men in it, viz. that the Cold fit of Fever is an affection of the Nervous system - Therefore I need not accumulate other authorities -

Many of you perhaps will wonder why I spend

spend so much time in proving what appears so plain? But if so, it must arise from your being unacquainted with the prevailing Opinions of Physicians, many of which, as they are held by some of the most reputable Physicians of Europe, it is our business to examine with due diffidence. Besides I think it absolutely necessary and a matter of the greatest importance, that Students be made acquainted with the different opinions of Physicians prevailing, especially of such as are in every respect our Equals, and therefore undoubtedly deserve our attention.

Now with regard to the Opinion of Dr Senac, who, as he holds the highest rank, is, I think, the Person of the greatest medical abilities in France. the (see De Recond Pag. 9.) after repeating many opinions that have been proposed concerning the Causes of Intermittents, concludes that inquiring after this Cause in the Nerves, is empty Speculation. there is a strong declaration against the Opinion just now delivered, which we might think so well founded. If you attend to what M. Senac here says, you will find that it is expressly directed against what Van Swieten has said. and every one that is diverted with the disputes of Physicians, will certainly find great entertainment in this dispute, subsisting between two Physicians who possess the highest Rank in Europe. However, I think there is but little in what M. Senac

says

says here – a great part of it is mere declamation – and many Phenomena of the Nervous system, which he speaks of as being so remote from sense, are as much the Objects of sense as any part of the Animal Oeconomy, and much more so than the Affections and Conditions of the Bile, which he considers as the cause of Intermittents – No one indeed will undertake to prove that the Nervous Solum-modo (as he speaks) are concerned here – But we will assert and maintain that they are primaries and specially concerned – If Dr Senac had known how much the nervous system is connected, and what a share it bears in other diseases, I imagine he would not have said in this place what he has said – However, the greatest part of it is indeed nothing but Declamation, below the dignity of a Physician.

After this I presume you will be greatly surprized to find that Mr Senac at last comes into this Opinion which he so loudly condemns (see pag. 20. Chap. 5 – also other Examples in Chapt. 6. Pag. 26 & 34.) I am sorry to observe that even great men cannot be always consistent. It plainly appears upon the whole, that M. Senac first says on this subject is not directed against the Opinion itself, but only as it is the Opinion of Van Swieten; for at last we find that in reality Dr Senac is as much of the opinion that the Cold fit, an affection

affection of the nervous system as either Van Swieten or we are.

In considering the Proximate Causes of fever, I have mentioned two Positions.

I. That the cold fit is the part which principally constitutes the disease, and is the cause of all the other Phenomena that follow.

II. That the cold fit is an affection of the nervous System.

The Arguments in proof of which I read you from Van Swieten. To his I would add another argument, which his also seems in some measure to imply, viz, That as the cold fit especially affects the motions of the System, and as these are only performed by Muscular Fibres, which depend on the energy of the brain, Consequently these motions must depend on an affection of the Brain and Nervous System.

Now notwithstanding all this, still we find in the works of Boerhaave and Van Swieten nothing but morbific matter spoke of, as the Cause of fevers, Lentor and acrimony, their Resolution and Expulsion &c; altho even with them these general Principles above mentioned, are apparently so manifest and established.

Next

Next we are to consider wherein the cold fit consists.

In the first place, I here agree with Dr Boerhaave, and say with him that the cold fit is owing to an Inertia Liquidi Nervosi, or, as I choose to use a more general Expression, or one to the same purport, but which does not represent or seem applicable to any particular Theory, I rather say a Debility of the Nervous Power. I think that the Lassitude, debility of the system, and insensibility which in many Cases is so remarkable, manifestly shew that there is present at the beginning of the cold fit a Debility of the Nervous power. And this from the paleness of the surface, shrinking of the bodyle, which imply a diminution of the Powers that propel the blood to the extreme Vessels, appear especially to affect the heart and Arteries. I say then that the Cold fit of Fever begins with a Debility of the Nervous power; and that this is the Cause of all the Phenomena that follow. How we are to explain this, and shew in what manner they are connected, is not at all obvious; and here begin our difficulties in Theory.

We can only refer it to a general Law of the System, which, however, is very well established, and is shortly this, that from the Nature of the Animal Oeconomy, wherever a deviation from the natural state of health takes place, there is a tendency, produced by

by this deviation, and afterward an actual exertion of power to restore the System to its natural ~~healthy~~ state. This Law constitutes what is called the Vis Medicatrix or AUTOKRATHA, so famous in Physic ever since the days of Hippocrates (Those who are not wholly acquainted with this Law may consult Dr Gaubius's Pathology from Sect. 633. to 640.) We at present assume the Existence of such a power in the system, as universally admitted. We shall therefore give only this example of it. That whenever any Cause tends to produce a debility of the Body, it is the Consequent Effect of this power to produce a reaction, and encrease the Energy of the System. Hence it is that Sedative and Refrigerant Powers prove apparently stimulant, viz, by producing such a reaction of the System. And this, I think, is the most rational method of explaining how the cold fit of fever produces the hot fit.

But this power of the System, of which we have been speaking, has been explained in two ways.

I. It is said by some, that it is an operation of the rational Soul, independant of Mechanism. This is the Doctrine of the Stahlians.

II. Others assert that is the effect entirely of one Corporeal part acting on another. Or that the one state necessarily follows the other from Laws of Mechanism,

i.e.

i.e. that their succession depends entirely on mechanical Principles.

With regard to these I shall only say at present, that the last is to be enquired into always and carried on as far as we can go with any precision or accuracy.

First, then, I say that the extreme vessels being Elastic, when in the beginning of a Cold fit, from a debility of the Powers propelling the blood, it is not pushed forward into the Extreme Vessels, they must certainly suffer a Constriction, even from their Elasticity. But this, you will find, insufficient, and will be under the necessity of taking in also somewhat else operating their Constriction, from their muscular power; for if the contraction of the extreme vessels arose only from the simple Elasticity of their coats, they would be immediately filled again when the action of the heart was restored. But this is not the case; for the Thirst, dryness, determinence of the surface, &c, which still continue, manifestly shew that the Contraction remains a considerable time after the action of the heart and arteries is restored perfectly in the Hot fit. It appears, then, that the Constriction which takes place here is owing to a spasmodic Contraction of the extreme

Vessels

Vessels - and this constitutes the Spasmus Peripheraeus of late Pathologists (Mitchell) by whom and many others this Constriction taking Place in the Cold fit of fevers is looked upon as the cause of the hot fit which follows -

It is to be observed that this Spasmodic Constriction is at any time brought on by the application of Cold, which seems to affect the body by producing a Constriction that is attended with the peculiar Sensation of Cold (Vid. Celsus Lib. 3 Chap. 9.) Now as we see from the application of Cold to a particular part, as the hand, that a reaction is produced to the part, viz. a glow, with heat and redness, I can imagine how Cold applied to the body may produce a general reaction of the Brain - and as the Constriction that is produced is on the extreme vessels, the Reaction of the brain will be particularly directed to the Sanguiferous System, Viz, the heart and large arteries; and thus a hot fit will Commence.

Now, then, I think we have got a Theory that connects together the several Phenomena of fever. To speak more particularly, I consider the remote Causes of Fever as a poison, which weakens the energy of the Brain, or induces debility on the System. This debility shews itself in the weakened action of the heart and larger arteries, in consequence of which the

Blood

blood is not propelled with its usual force, and therefore in less quantity to the extreme vessels - Hence they are contracted both by their elasticity and muscular power, or vis Vita - But more particularly they are spasmodically affected in consequence of the sense of cold, owing partly to the want of the determination of the blood, and partly to that of the Nervous Energy to the extremities, which prove a stimulus to the Reaction of the brain - And this reaction being determined to the heart and arteries, gives an energic action, or hot fit, which subsists as long as the stimulus exciting it subsists, that is, until the Spasm to the extreme Vessels is removed, and their proper action restored; as appears from the flowing of sweat, and the restoration of secretions formerly interrupted -

This Doctrine seems to recommend itself by its Coherence - The only difficulty is to explain the mechanical Connexion between the several parts of it - But not to mention that this difficulty is not so great as what attends other Theories, and that the merit of ours does not depend upon the explanation or Connexion of its several parts must be admitted, but, (as I take it to be the case) upon the several parts being true in fact - Thus I have given proof of Debility in the beginning; this followed by a Spasmodic Contraction of the extreme vessels; which we found almost constantly brings on a hot fit,

or

or increased action of the heart and arteries. Therefore I say it is manifest that fever consists of three parts, Debility, Spasm, and Increased action of the heart and arteries - and as these regularly succeed one another in point of time, I consider them in the same order as Causes and effects - and altho we should not be able to explain exactly how their succession comes about, that is, how such Causes come to produce such effects, yet I must assert, that the more distinct knowledge we have of the different States thus succeeding one another, we shall be the more able to manage, and properly to limit the several parts of Practice, than we should otherwise have been. I consider this as a doctrine that is sufficiently evident to me; but I would have you to examine it with the utmost rigor - and to this purpose I shall give you what assistance I can, by mentioning the several difficulties that present themselves, which might be objected to my theory.

First, with regard to the three Stadia, of which I said fevers consisted, the two last, the state of Spasm and hot fit, are the most evident and universally observed, so that these certainly do take place - But the Debility is not always manifest - accordingly Dr Hoffman's System goes no further than the Spasm and

and not fit, not taking in debility at all - And indeed in two Orders of Pyrexia, the Hemorrhagia and Phlegmasia, there is no debility at all, but only Spasm and increased action - So that perhaps Dr Hoffmans system may be right - Accordingly it is objected that, if the existence of a previous state of debility is not proved to be universal, but it be granted that Spasm arises here from something else than debility, why may it not be so in proper fever? This may at present give some difficulty, but we shall find that it does not affect us much - I shall hereafter show, when we come to consider the Causes of Inflamation and Hemorrhagy, that the production of spasm &c. even here is to be explained in our System - There is always a previous debility or something Analogous to it - However, after all the objection amounts only to this, that Pyrexia depends universally on Spasm, but that there is a difference in the Case of Inflamation and proper fever; and though it is true that a debility does not take place in Inflamation and Hemorrhagy, previous to the Spasm, yet this does not say that debility does not take place in fever - in which I will undertake to prove that the Spasm always arises from debility; for, I say that, debility is always present in fact when the Phenomena show it - Such as

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the Symptoms of Languor, Lassitude, debility of the Voluntary motions, Anorexia, Delirium, &c - Moreover some of the Remote Causes, and perhaps the most part of them, are evidently Causes of a Septic nature, or such as tend to produce debility -

Again, supposing the Causes of fever to be direct Causes of Spasm, they must at the same time be supposed to produce the debility which appears so evidently to take place: and we cannot easily perceive in what manner the Spasmodic state should exhibit first their appearance of debility and immediately after the state of excessive action. Such a double Operation is admitted with difficulty - But a greater difficulty still remains, which is, that the Operation of Cold is commonly supposed to produce fever, and said to be an immediate Cause of Spasm - But to me nothing is more obvious than that Cold in producing fever, must operate by inducing Debility - and I expect when the Operation of Cold is properly understood, we shall be relieved from this seeming Embarrassment -

First, then, I presume that when Cold acts alone upon a sound and entire body, and produces Pyrexia, it is always of the Inflamatory kind - and to me it is very doubtful whether Cold can produce permanent fever, unless debility has preceeded, or topical affection intervened -

Now

now if this be so, you will observe that, like the argument drawn from Inflamation and Hemorrhagy, the case of the cold fit does not apply – And further, if it be true, that Cold does not produce a proper fever, unless it be applyed to the body already subjected to causes of debility, i,e, previously weakened; it will rather concur in establishing our Theory – Now the effects of cold are hardly considerable, except when it acts on a body previously weakened; for we are often exposed to cold without any bad effects – Every one is sensible that fever is hardly ever produced by exposition to cold, even considerable vicissitudes of it, unless circumstances of debility concur, as from Evacuations, Drunkenness, Venery, Convalescence, &c – From this analogy too we infer that, the causes of fevers are commonly Sedative powers, or of such a nature as to produce debility; because when introduced into the body they are remarkable for rendering us liable to the injurious action of cold – And therefore we say, that in most cases, when Cold produces fever, we have reason to believe that Contagions and miasmata have been taken in, but remain in the body without showing any effects, until excited by the application of Cold. We shall hereafter render it probable that Miasmata may concur with cold in producing fever when not expected.

J.

It often happens that Contagions are introduced into the body, which, though they do not produce a degree of debility alone sufficient to give occasion to the Spasm necessary for establishing fever, yet induce such a state as easily admits of spasm, and the consequent Circumstances of fever, from the occasional application of a degree of cold that would otherwise have had no evident or considerable effects. Therefore the effect of Cold in producing fever, is no Objection to its being founded in Debility. Since we find, that in order to its having effect, it is commonly necessary that such Causes concur as evidently act by directly inducing debility.

But I shall carry the Objection still farther — For though I would make use of the above fact to obviate every difficulty, viz. that Cold does not take off the Supposition of previous debility, but that this is common-ly necessary to its taking Effect; yet it may be alledged that, extreme cold applied does sometimes act by itself and produce all these symptoms which we have imputed to debility. This we will allow; for cold in many Cases acts as a debilitating Cause, or powerful Se-dative, and in certain Circumstances destroys life alto-gether, and this without producing any Spasm to

act

act as a Stimulus — But abstracted from this Circumstance, I say that Cold in a certain degree (short of that which induces death), may produce circumstances of debility that take place in the beginning of Fever — But it is not to be said to do this by operating immediately in producing Spasm, but as a Sedative power — and also after this, by the Continuance of its application — It may produce Spasm so as to give fever, but it is not probable that Cold can support a permanent Spasm, unless debility had preceded.

Moreover, allowing that the direct effect of Cold be to induce Spasm, it does not alter our Doctrine; for this Spasm must be supposed in part stimulant and in part Sedative; and according as the one or the other predominates, or in fact as the Symptoms of debility and encreased action are in greater or lesser proportion, it will give us different Indications.

Therefore it still appears, that the Doctrine we before laid down is good, that the Causes of fever in this certain succession produce the three states, debility, Spasm, and Encreased action of the heart and arteries.

I think we have discovered that the begin-
ning

beginning of fever is laid in a debility induced on the System - and that from hence is produced a spasm on the extreme vessels, which is the cause of the hot fit. I think it is established in fact, that in every fever these three states takes place in different Proportions, at different times, and with different Proportions of duration, viz, Debility Spasm, and encreased action - It is however a fact supported by what our Lawyers call a circumstantial proof - - -

What we advance is only an addition to Dr Hoffmans system, viz, that a debility precedes the two stages of which he makes fever consist - It is to be objected to us that a pyrexia arises from Inflamation, when there is no Debility - and that Cold appears often to be the only Cause of fever; and that it is so by inducing immoderately a Spasm on the Extreme Vessels -

With regard to the first of these Objection, It cannot be fully discussed here; but we shall hereafter show, that in Inflamation a state analagous to debility, and attended with a similar Operation, does take place, and is equally efficacious in producing Spasm -

With regard to the other Objection, I say that Cold has not these effects (of exciting proper fever) except

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except in bodies previously debilitated - Whoever understands the operation of Cold, as I have formerly delivered it, will understand this - It is not found to be the degree of cold applied, or the Vicissitudes of it, that affect us, when fever is excited by it - But the most common observation is, that some weakening power, some error in the Non-naturals, or such like, has taken place before, with which the concurrence of Cold has induced fever - Further, suppose no such trespass in the Nonnaturals has taken place, and yet fever is excited, we may still have recourse to Miasma or contagious matter, of a Sedative Operation, introduced or produced in the body, which had the greatest share in the production of fever, being favoured in its effects, or excited to action by the application of Cold.

Moreover, in the last place, supposing none of these to exist, but that Cold operates alone; we have yet a resource, and need not give up the Universality of a Debility taking place, previous to the Spasm, in every proper fever - For cold itself may Operate in that way - It may in certain Circumstances have the effect of induceing a previous debility, and in Consequence of that a Spasm - so that a proper fever, agreeable to what we advance, may arise from it - Therefore we think that none of these Objections have any weight, but that fever in fact consists of the three parts above mentioned -

If

It might be desirable to advance a step further, and explain the foundation of the Connexion between these several States - But here I acknowledge may occur, and I shall not think it safe to enter far into it at present - With regard to the Connexion between Spasm and debility, to show how the former follows the latter, we might say that the debility, by weakening the action of the heart and arteries, and thereby abstracting the blood from the extreme Vessels, gives occasion to their being thrown into a Spasmodic Contraction - But after this, in order to say that the Spasmodic Constriction produces the Reaction, we must have recourse to the Vires Naturæ Medicatrices, by means of which, the Spasm proving a Stimulus to the System, produces the necessary reaction - This follows in Consequence of an inexplicable Law of the System, on which the Vires Naturæ Medicatrices depend - It is enough that we know this Law is universal, to refer to it - I might here say that a sense of debility is a condition of the same kind, and from the same Law necessarily brings on a Reaction - But this would seem more strange - and to account for it on Mechanical principles is difficult - It would appear that the Reaction is produced partly by Debility and partly by Spasm; but the debility produces it by the interruption of Spasm -

As to the other questions that might here occur, as how the increased action of the heart and arteries

takes

takes off the debility and Spasm which were its Cause. I must refer these to an after Consideration. We conclude however, that fever consists of these three states, debility, Spasm, and increased action; and upon such supposition proceed to consider the Symptoms belonging to them.

We begin with Horror, Tremor and Rigor, which is considerable a Part of the Cold fit of fever, that some Physicians have considered them as constituting the whole of the cold fit. These Symptoms are upon other occasions the Consequence of External cold applied to the body; and therefore they might be considered as the effect of Cold only; and that Cold in the beginning of fever be always necessarily precedes and accompanies them, so that they might be thought to impart nothing but a sense of Cold. But we know that other Causes, besides cold, bring on this Tremor; as Fear, which indeed frequently brings on a sense of cold also. But I think it often brings on Tremor in a greater degree than it does Cold; so that it must be supposed to operate in some other way to produce the Tremor, than by first inducing Cold. But however this may be, it is here proper that we consider more particularly in what Tremor consists.

Physicians have supposed Tremor of two kinds, Convulsive and Paralytic. With what propriety they have considered it as Convulsive, I shall not at present enquire. But I am convinced that of twenty Cases of Tremor

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that occur, nineteen at least are paralytic, weakness or atonia: and in this light I consider it in the present Example, viz, as the effect of debility - That it is so, the observation of every one will suggest proof enough - Accordingly Dr Gaubius has with great judgement considered it as symptom of Palsy or atonia; whereas Savauges has improperly placed it among the Convulsive disorders - I consider it in Gaubius's view, as an effect of debility; for we may observe that it occurs when we attempt to move a member; but when well supported the Tremor does not appear - The meaning of this is, that the Tremor is an effect arising from a constant alternation of the debility and the effort of the will - And if any body will consider it more particularly, I think they will plainly perceive it to follow from these - It is to be observed here, that there are many instances of motion produced by the effect of the Energy of the Brain, without any Consciousness of the Concurrence of the will to produce such motions - Thus the Chattering of the teeth, or Tremor of the Lower Jaw, lies between the tendency of it to fall down, from its weight, and the constant effort from the Energy of the brain to raise - The weight of the Lower Jaw is counterbalanced by the Levatores muscles - If these are enervated by disease, or in sleep, the Lower Jaw falls down - These forse in the case of debility there is this tendency of the Lower Jaw to fall down, and this along with the constant effort of Nature to raise it, gives the Tremor - This, then, infers a constant effort of the System, while the Tremor remains,

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or some reaction in the state of Debility - Therefore in this light I would look upon the Tremor that occurs in the cold fit of fevers, viz, as a Mark of the reaction already begun - That is, Tremor is not so purely a mark of debility as might at first have appeared; but this is mixed with a constant endeavour to support the Tone of the muscles - This is reasoning in Theory, but I shall here, as in all other cases, establish my Conclusions in Fact.

I say that Tremor is a mark of the Reaction; for as the Tremor arises to a greater degree, the reaction proves more considerable, - The Spasm is more quickly overcome, and the Paroxysm sooner admits of a solution - This is equally agreeable to observation; for we always find in the beginning of a Paroxysm of an Intermittent, the Tremor is more considerable than in the beginning of a Continued fever - and always in proportion to the Tremor is the reaction more violent, and consequently the Febrile accession of less duration - No body has marked more facts to this purpose than M. Senac (see Pag. 20 De the cond. Frob. Intermit. et Remit. nat.) He says, that when the Tremor and Rigor occur in the beginning very violent, the fever is certainly to turn out an Intermittent, and the Paroxysm to admit of a quick Solution -

Also take this further Observation, that the horror tremor and rigor are always most considerable in those Intermittents that have the shortest Paroxysms,

viz,

viz, most considerable in Quartans, less so in Tertians, and least of all in Quotidians (see Senac's Observations to this purpose, speaking of Cold with the Circumstances of Tremor, and Rigor that attend it. Pag. 23.) What he means here by his "Valedior Paroxysmus" is plainly a longer Paroxysm. If what he here says be true in fact, as I could shew it from numberless other Authorities, it makes the matter plain. Besides in Continued Fevers, when they are long in duration, there is no appearance of Tremor and horror at the Exacerbations of critical accessions, that do give a Solution to the disease, are commonly distinguished by some extraordinary horror and Tremor. So that it would appear that the Horror and tremor are not to be considered as purely Symptoms of the first Operating cause, the Debility, but as the Consequence of the reaction of the System that follows to resolve the Paroxysm: And from the very condition of these (the horror and Tremor) we are enabled to judge of the condition of the disease that is to follow. This is of great Importance in distinguishing fevers. Thus, then, we conclude

But

But still there are difficulties that seem to arise from some words of Dr Boerhaave (vid. aph. 749.) I am certain he has here chiefly in view the circumstances of the cold fit, to which his Symptomata pejora are to be applied, viz, the Nausea, Debility, &c – and the "Hæc prout majora, pleraque, simul cum febris pejor." ought to be confined to the Symptoms of debility – The Languor and insensibility which, as they are in greater degree, certainly show a worse fever to be coming on – But the same is by no means to be extended to the Horror, Tremor, and Rigor; nay with these the contrary is manifestly the case – It was necessary to observe this, least you might be led away by any theory of Dr Boerhaave –

And now see what he says elsewhere (Aph. 623.) – This must be understood as respecting the Cold observed by the bystanders, but which is at the same time accompanied with horror or Tremor – In the end his words are, "In "Peste incuriente frigus summum Pregressa Calor maxi "=mus!" – authors on the Plague are not very accurate in their observations, so as to mark whether horror or Tremor occurs in the beginning of that disease when fatal – But I find it observed in one author (Peter Salius De febre Pestilente), that fevers of a very Malignant nature were frequently introduced with circumstances of very great cold,

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" that the Limbs seem as it were frozen - But at the same time ~~mark~~ marks his Expression " dum levis horrorad est." Further, with regard to the Plague, I do not find Dr Boerhaaves Authority for what he here says - He never saw the Plague him-self, and therefore must have taken this Observation from Authorities; - and as for Van Swieten, his Commentator, the only Author he refers us to is our Dr Sydenham - But what he says does not support Dr Boerhaave - He indeed mentions some Cases of Plague as beginning with horror and Tremor, like an Intermittent, but does not speak of the Termination of these Cases, to say whether the Event was better or worse than in other Cases - And though it should be allowed, that Tremor has sometimes brought on dangerous fevers, it only amounts to this, that after the Reaction began the Debilitating cause still remained and determined the Event of the disease - And in this way we are to explain the malignant Tertians of warm Climates. I would refer you to later Writers, on the Plague, as Mr Chenneau, whose Observations confirm the Doctrines we are delivering.

I go on to Consider another set of Symptoms, viz, The Affections of the Stomach - These are in some degree so generally connected with fever, that there can be little doubt but that they depend on the same fundamental

Cause

cause as the other Symptoms, and are intimately connected with the general affection of the System in which fever consists. -

To explain these symptoms Pathologists have generally had recourse to some particular matter lodged in the Stomach and Duodenum, and giving an Irritation - Indeed they have proceeded so far in this Opinion, as to say that the whole of fever depended on such matter present in the Stomach and Duodenum - Even Hoffman has endeavoured to show that the cause of fever acts chiefly in the Duodenum - It is hence that we find the Bile so much assumed as the cause of fever, both in the Antient and Modern Writers - This matter deserves our attention -

And in the first place - I say that the whole of their Theories will be rendered doubtful from hence: That we know very often Symptoms of the Stomach arise from a Sympathetic Affection - ~~attend~~ Observe how often Vomiting is produced from Affections of distant and remote parts of the system, without any Cause, or particular Irritation, being present in the Stomach itself — how may not the Nausea and Vomiting that occur in fevers, be accounted for in this way? Every Body knows that when a Deliquium Animi is induced, as from bleeding, the person is at the same time

time is immediately affected with Vomiting - Now here there is no particular affection of the Stomach to produce Vomiting - But it arises from the general affection of the system, or debility that is induced - Hence, then, it might be said that the Vomiting which occurs in fevers was owing to the same cause - and indeed an obstinate Vomiting is a symptom of fever, which alone with other marks demonstrates a great degree of Debility - But the matter must not rest here; - for in the cold fit of fever it is evident that the Vomiting does not depend on the general debility alone, or an affection of the System in general, but on a particular state of the Surface of the body.

Of the mutual connexion between the stomach and surface of the body, there are many satisfactory proofs, which are laid down by authors, particularly by Dr Hoffman, in his Sympathetia Corporis Humani - I say that here the Vomiting is owing to a constriction on the Surface; in proof of which observe some particular circumstances that occur in fever - The fact is this, that whereas the vomiting comes on in the Cold fit, it goes off as soon as the hot fit comes on; or at least as soon as the Sweat begins to flow - Therefore I conclude that the Vomiting depended on the Constriction of the Surface - For we find that it ceases as the determination to the surface of the body is fully established. This is beautifully illustrated by a particular fact from Dr Sydenham - He tells us that in the beginning of

of the Plague he was often disappointed in the use of Sudorific Medicines (which he administred for the cure) because they were always evacuated by Vomiting, which often attends the beginning of that disease - But he says this was not the case after such time as a Sweat had naturally broke out in some degree - Therefore he found it necessary in order to abate the Vomiting so that his Diaphoretic medicines might be retained on the Stomach, to make use of Blankets &c, in order to restore the motion of the Blood to the surface, and so in some measure relieve the Vomiting before he gave his Diaphoretic medicines, otherwise they would be ejected. (see his Prof. Integri) Therefore I say that the Vomiting here depends on the Constriction of the Surface, though it may also in some measure depend on the general debility of the System.

How Vomiting is produced from hence, it is not easy to explain - Observe however that these Causes first produce Nausea.

In prosecuting the Theory of fever I avoid every thing that can be called Subtile - but proceed entirely on what is established in fact. —

I think it manifest from the Phenomena of fever, that it consists of three States, viz, of debility, Spasm, and encreased action of the heart and Arteries, which, as they thus succeed one another in a regular Order in point of time,

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we suppose to proceed in the same order in a series of Causes and Effects. - I was considering the Symptoms more particularly, with a view partly to give an Explanation of these, and partly to illustrate what we are maintaining with regard to the general Subject.

First, as to the horror, and especially the Tremor - This I look upon as arising from the effects of the debility and consequent effort, or reaction, of the System, alternating with each other - and to this purpose I observe, that the more remarkable the Tremor is, the stronger and more vigorous is the Reaction that follows - and on the other hand, the less the Tremor is, the more the fever is disposed ad Diuturnitatem (as Mr Sanac speaks) - We shall meet with many things hereafter, to illustrate and prove the same -

We were proceeding to speak of the Affections of the Stomach, which we presume to be connected with the general Condition of the System that takes place in fever - I say these Phenomena, relating to the Stomach, are by no means to be looked upon as owing to any particular affection of that Organ - Authors indeed have always been ready to suppose in these Cases (wherein Vomiting occurs) some Acrimony or irritating matter applied immediately to the Stomach - This indeed they have recourse to in all Cases, where such affections of the Stomach occur - By the Supposition of Irritating matter being always necessarily present

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in order to produce Vomiting, &c, is overthrown by this - that we know the Stomach is often affected both by general affections of the System, and affections of particular distant parts -; for we know that a stroke on the head, or a sprain of the feet, will produce a Vomiting, as well as Tartar Emetic taken into the Stomach - In this way the stomach is frequently affected Sympathetically, as we may call it -

We see too that Vomiting attends Deliquium Animi from bleeding, or other debilitating causes - and therefore it appears that vomiting may arise from a general debility of the System. However in the Cold fit of fever it does not seem that the debility immediately produces the Vomiting; but the violence of it seems to be more immediately connected with the state of the surface - Thus, in fever we see that as soon as the hot fit is formed, or at least as soon as any degree of sweat flows, the Vomiting ceases - and for this reason Sydenham, in the beginning of the Plague, could not get the stomach to retain his Medicines till he had find some means to procure a degree of heat, or a sweat on the surface, as by covering the face and hands of the Patient, &c -

Therefore

Therefore I think that these things in reality tend to confirm, on the other hand, the Existence of a general Debility in the beginning of fevers - But I consider it now as a fact that the vomiting depends on this, and the Spasm on the Surface - And shall make an attempt towards an Explanation -

To this purpose I observe, that the debility does not directly produce Vomiting, but there is previously induced an anxiety, sickness, and Nausea, which seem to depend on, and indicate a state of debility in the Stomach - Now this subsists some time before the vomiting supervenes, and the Vomiting seems to be a reaction occasioned by this Debility, agreeable to the general Laws of the System, whereby an exertion or effort is made to remove the Sickness - The Vomiting then is a reaction and an Instance of the Vis Medicatrix Naturæ - Thus, those who are fond of marking the αὐτοκράτεια on every occasion, particularly take notice of Vomiting as an Effort, even in Cases where no Irritating matter is allowed to be present, and to require to be thrown out by Vomiting - I say that Vomiting is a reaction; for by Observation we find that a vomiting puts an end to the Cold fit of a fever, and brings on a hot fit - at the same time too it produces a glow of heat over the whole body - I cannot help giving a farther illustration here, by a fact, which

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is not much attended to by Physicians, viz, that Emetics, though so commonly supposed directly Stimulant, are many of them in reality Sedative Medicines, or such as induce debility. This might be confirmed from many Considerations, viz, that some of the most remarkable Emetics are nothing but Narcotic poisons, which in their direct Operation produce a debility of the Stomach, from thence a reaction, or the Effort of Vomiting, is exerted to relieve it - To this we may add, the Consideration of the other Causes of Vomiting. And now I say, all this tends to support our general Doctrine, and the Theory we are giving of Vomiting in fevers - Having said thus much, then, we observe, that while it is probable that the Sickness and anxiety which precede Vomiting, are the Effect of debility and Spasm - The affection of the Stomach in the mean time being a part of the fundamental disease - The Nausea and Vomiting which succeed are perhaps truely a part of the effort of Nature, or the reaction, that has a tendency to restore the Energy of the Brain, and take off the Spasm from the extreme Vessels - This appears to me to be the Case - And upon the whole, this circumstance of Vomiting tends to Confirm our system. Here, however, I shall endeavour to obviate an ambiguity that may occur - I have just now said that

Vom

Vomiting is to be looked upon as a symptom of the reaction - But I am not to conclude from hence that Vomiting in fevers is always a good Symptom - For if it is Obstinate, and proceeds to a considerable degree, it shews the power of the Cause to be great - viz, the debility - and therefore in fevers great vomit - ing is always looked upon as a sign of great debility, and more universally lesser degrees of the same thing. Nausea and want of appetite are to be consider - ed in the same light, as bad Symptoms; for they show the disease to be more considerable -

By the vomitings that ouer in fevers, a great quantity of bilious matter is generally thrown out - This has made the generality of Physicians very tenacious of the Opinion that these Vomitings were owing to the irritation of this bilious mat - ter contained in the Stomach, and that bile has a considerable Share in the production of fever - This I touched on somewhat before - The subject is of importance, and deserves our notice - It has been very universally observed that Warm seasons and warm Climates produce some change in the

State

state of the bile, and in particular that the Cholera morbus is the peculier product of such seasons and climates, that is, a copious afflux of bile to the Intestines - Sydenham indeed asserts that the proper Cholera Morbus is almost confined to the Month of August - In Minorca Cleghorn observes that it is a disease of Summer and the beginning of Autumn - But it will appear sooner according as the Seasons happen to be warmer, though in general it extends from the middle of July to the middle of September - Such is the fact, but the Theory is uncertain, inasmuch as it is dubious whether the bile is secreted in an unusual large quantity, or, being more acrid occasions by its stimulus a more copious effusion - Very probably both have a share -

On the other hand we observe that the Cholera morbus of such effusion of bile, frequently happens with any fever either preceeding or following, so that what ever be the Change of the bile, it does not necessarily produce fever - and therefore if we can find other Causes we shall be led to suspect that any state of the bile whatever does not produce fever on any Occasion - That it does not, will appear from these Considerations; for we say that in Case of various Autumnal fevers, especially a copious afflux of bile, may occur from several Causes - Which afflux we shall shew to be the Con

Consequence rather than the cause of fever.

In the first place, from what has been said, we know that the attack of fever is attended with a Con-striction on the surface, I mean, its Vessels, which is owing to debility. From thence the blood will be sent in less quantity to the extreme vessels, and must therefore be accumulated in the large ones, and, for evident reasons, especially in the Venous System. and not only this, but in general, while the Vessels of the surface are constric-ted, it must be determined into the Vessels of the internal parts, particularly into what is called the Hypochondriac System, where there is not only the largest proportion of Venous blood, but also that which is more difficultly transmitted. Hence when the blood from want of Ex-ercise is not sent in due quantity to the Extreme arteries, it is accumulated in an unusual quantity in the Hypo-chondria.

This will account for, and is confirmed by, the Congestions so frequently formed in the System of the Vena Portarum in those who die of Intermittent fevers. Thus too, Harvey upon dissection found, that in those who died of Intermittents, the blood was accumulated in the Lungs, right Ventricle of the heart, and other Viscera.

Cleghorn

Cleghorn observes particularly, that he found the Spleen enlarged to the unusual size of four or five pounds weight, and at the same time of so soft a consistence, and red colour, that it had the appearance of coagulated blood more than any thing else - This, therefore, accounts for a more copious secretion of Bile - In the Sporadic Intermittents Mr Cleghorn observes, that there is not the usual quantity of bile poured out that there is in others - but still there is an excess above the natural quantity - and in Autumnal fevers it appears that the bile is in a condition to flow more copiously; but by no means is this the cause of the fever -

Also I can explain the copious efflux of Bile in fever on another footing - Vomiting itself may be considered as a cause of it; for nothing is more obvious than that Vomiting, forcibly excited, agitates and emulges the Biliary Ducts - and by the inversion of the Peristaltic motion the bile is thrown into the Stomach, &c - Now the Evacuation of Bile in fevers by Vomiting will be more remarkable, because here there is a cause concurring, which promotes its secretion, viz, the Constriction on the Surface, which has this effect by determining the blood more copiously to the Liver -

Further, it will be still more remarkable

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in Autumnal fevers, because in these the bile is disposed, from other circumstances, to be secreted in greater quantity. The great discharge of bile may, therefore, happen without furnishing ground to say that the state of the bile has any share in the cause of the fever; notwithstanding this Opinion has been very universally adopted both by Antients and Moderns. I might here enter into the consideration of the Opinion concerning this, held by the antients and Moderns. As to the former, I do not meddle with their Opinions, because I maintain they were not in a condition to reason on a matter of this kind. But as to the Opinion of Mr Senac, who, from his great Erudition, has acquired a deserved Reputation, I must observe that

In his book before quoted, after rejecting the opinions of every other author on this subject, and particularly that of Van Swieten, gives one of his own, which he looks upon as more probable. Viz, he refers the cause of fever to the Bile. But he himself gives arguments enough to refute it, had he attended to them. (vid. De Recondita &c.) He observes that there are certain other disorders, in which people evacuate great quantities of Bile, both upwards and downwards, and yet have no

Fever

Fever - Nay he even takes notice, that in Jaundice the Bile may be diffused over the whole system, and yet no fever be present (I would wish this book to be in all your hands, though I much doubt if it is - therefore I read to you what he says) --- Also in his second Chapter, where he is treating the Varias Sententias &c, he gives another Argument which is very conclusive against this Opinion of the fever depending on the bile - He uses much the same arguments that we do with regard to Vomiting. In this place therefore he concludes that the Cause of fever does not act in the Prima Via - You may exam-ine this at your Leisure, and observe whether every word here does not apply to what he afterwards says of the Cause being the Bile - Upon the whole then I conclude, that the Bile is inadequate to the Effect of producing Fever, and that even those we so generally call Bilious Fevers are not owing to the bile - But we are convinced that Intermittent fevers are owing to something taken in from without, viz, what we call Marsh-Effluvia - and of which we shall say more hereafter - For whatever be the state of the Bile, if we avoid Marsh-Miasmata, no Intermittent fevers are produced. Yet the Circumstances of the Bile may often, in

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some measure, influence our method of Cure — But unless the Reception of marsh Effluvia concurs, as Dr Lind observes, it is not the heat of the Climate alone that will bring on these fevers (See his ingenious work on the preservation of the health of Europeans in warm climates.)

Mr Senac does not suppose that the Bile of itself can acquire force enough to produce fever, but that it is first mixed with the febrile Miasmata, and then produces its effects — and here I must allow that the notion of the mixture of the Miasmata with the Bile is not altogether without foundation; for though I maintain that the Miasmata only produce fever in Consequence of their action on the Nervous System, yet I will not deny that they may enter the fluids, and act as a ferment in them — And moreover I say, that they may associate with some of the fluids more than others; and with these more or less as they are in different Conditions, so as to make the affinity of the miasmata with them greater or less. This probably is the case with the Bile — The febrile miasmata may unite with it, especially in Autumn, so as to occasion particular disturbances in the Primæ viæ. But when I have made this Concession, I say it does not apply to the Case of fever, but is what I presume actually takes place in Dysentery — This is probable;

for

for the Dysentery is a disease arising from the same marsh effluvia, which most commonly occur without Dysentery - and Dysenteries also without fever, at least in the same form - It has been observed Do in warm climates, when Dysenteries and Tertian fevers are Epidemic (vid. Cleghorn) that those persons who had the Dysentery were less liable to be affected with a Tertian fever - and Vice Versa - The one being a security against the other - Mr Cleghorn too gives a confirmation of the same with regard to the difference between Children and adults, as they are more or less liable to Tertian fevers - He quotes a passage to this purpose from Cælius Aurelianus, and observes that the antients reckoned Children more liable to Epidemic Tertians than others, but says that in this he differs from them, for though it is certain that the Bile and Prima viæ of Children are much more liable to disorders than those of adults, and he had observed that Bilious Diseases first appeared among Children, yet he asserts that they are less liable to fevers - Hence then it appears, that the Cause of Fevers and Bilious Disorders is somewhat different -

I have said thus much on the subject of Bile being the Cause of fever, from a regard to the Opinion of Mr Senac - also to Sir John Pringles, and even Mr Cleghorns;

for

for all of them seem more or less inclined to the Opinion, altho they only give some hints to that purpose -

We must next proceed to take notice of the Sensorium, and explain the Symptoms expressing its state - This indeed is a difficult undertaking; but nevertheless I think we may, and ought here to try what we can do, or how far a cautious Theory will carry us -

Yesterday I was laboring at two points - first, to explain the Vomiting that occurs in fevers, which I shewed to be consistent with our general system, and to depend on the debility of the system and Spasm on the Surface - And secondly, I endeavoured to show that the Vomiting was by no means owing to an acrid matter irritating the Stomach; and particularly that it was not owing to a greater afflux of bile, which is observed to take place in many fevers - But we found that we could explain this afflux of bile upon the same principles with the other Phenomena of fever, agreeable to our general Doctrine, - and that it was not to be considered as a Cause, but an effect of fever - However, I said there might occur what I called an Autumnal state of the Bile, which might influence its Secretion, and be of so much Consequence in fever that it ought to be attended to in the Cure -

I shall next take notice of a set of Symptoms which express the state of the brain in fevers -

Every

Every Problem relating to this is of the most intricate nature and most difficult Investigation. However we shall prosecute our usual Plan, viz, to find out, in the first place, what is the matter of fact, and then we in what state of the System is thereby implied — As the greater part of fevers are attended with Delirium more or less, it gives a presumption that this is connected with the general state of the System, or the Cause on which fever depends -

When Delirium comes on in the hot fit of fever, and is preceded and attended by Headach, throbing of the Temples, full and strong pulse, &c, we do not doubt to ascribe it to the encreased Impetus of the Blood in the Vessels of the brain; especially when we consider that every Inflamation of the brain consists in such encreased Impetus, and is attended with Delirium. There can be no doubt of admitting such a Cause, for that there is one Species of Delirium depending upon encreased action of the Vessels of the brain, is not controverted. Accordingly all Pathologists agree in admitting this; and indeed make it too general, refering all Causes of Delirium to the state of the Circulation in the Brain. Thus (vide Boerhaave Aph. 701.) in the whole Tenour of this Paragraph for

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all his "plurimas Causas" I maintain that Dr Boerhaave had chiefly in view the state of the Circulation in the Brain, and that too, confined to increased Impetus - as we may see from his method of Cure, which he gives in the next paragraph - For nine tenths of his Remedies are plainly means of diminishing the determination, and tend only to remove increased impetus in the Vessels of the brain - It is true his Commentator thinks we may go much further, and says there are Sympathetic Deliria, depending upon affections of the distant parts of the System, particularly of the Stomach - so that the Functions of the Brain may be affected independant of the Circulation - But he had no Conception of a Delirium being cured by the application of powerful Stimulants, Cases of which I have been told on good authorities, particularly of a Gentleman in a fever who removed a Delirium by the use of Wine, and was obliged to drink eight bottles in a day, because as soon as the effect of the Wine was over he immediately became delirious - This is one Species of Delirium which, I imagine, neither Boerhaave nor Van Sweiten ever thought of -

We say, then, that the motions of the ner

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nervous power may on many occasions be changed without any alteration in the state of the Circulation of the Blood - and I suppose you know that changes of the Intellectual faculties are only to be sought for in the state of the motions of the Nervous System - It is true that the Impetus of the Blood in the brain often considerably affects this - But at the same time we often see the Impetus diminished in cases of great Exhaustion. And on the other hand, encreased in violent Exercise, without affecting in the least the Intellectual faculties - Therefore I look for the Cause of the change of the Intellectual faculties in the Nervous system - For the immaterial part of our mind in the living state is observed very exactly to correspond with the state of the Corporeal part, the Nervous system, and changes in the last considerably affect the other -

Now I suppose it demonstrated in Physiology, that the Energy of the brain, or distribution of the nervous power, at different times is different in degree and force - and in this difference consists the different states of sleep and watchings - Now these different state of the Brain may be expressed, without respect to any theory, by the Terms Excitement and Collapse, which are to be used only as signifying the matter

matter of fact.

From the Phenomena of Sleep and watching, we know, not only that this Excitement may be in different degrees at different times in the whole system, but in different degrees in different parts of it — And we can easily understand how this inequality of Excitement in the brain, with respect either to the parts of the brain or different parts of the System, can produce Delirium. This is agreeable to some Phenomena of sleep and watching - When a person falls asleep, the transition from watching to that state (that is from Excitement to Collapse) comes on by degrees and successively in different parts — and hence when a person is in this intermediate state, a part of the brain may be in a state of Collapse while a part may yet have its Excitement remaining, or by impressions on particular Senses subsisting, the Excitement in some parts may be increased - Now from this inequality (as impressions may even in this state be made on the Organs) it is manifest that Delirium and Confusion must arise - and accordingly it is observable that this Delirium does not continue till the Excitement, or Collapse, is rendered more compleat with respect to the whole -

The same is observable in a person com-

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coming out of sleep - If by pinching, noise, &c a person be suddenly awakened from sleep, the Excitement is not immediately complete; but there is in the mean time an unequal Excitement of the Brain, which gives confusion of the Intellectual faculties, or a delirium - accordingly nothing is more common in such Circumstances, when a person is suddenly awakened by unusual Stimuli, than such Expressions as "I was out of my senses - half asleep and half awake - did not know what I was about, &c!" This is an illustration of a fact - and I think the Explanation may be extended so far as that we may look upon the whole of delirium of Fever as depending upon the inequality of Excitement or Collapse of the brain - Which, therefore, is all I think necessary to explain Delirium in fevers -

We know that in fever there takes place a diminution of Excitement of the brain; for we find it frequently proceeds to a deeper state of Collapse, that often attends fevers, known by the Term Coma or a deep sleep - Fever, we observed, is founded in Debility, so that Delirium is sometimes among the first Symptoms - This Collapse, it is to be noticed, is not equal with respect to every part of the body - but is more complete with respect to the animal than to the vital

the Vital functions, and takes place in different degrees with respect to the natural – It appears, then, in fever, that inequality of the excitement of the brain lays the foundation of Delirium – Now this I presume is of two kinds – It may depend upon the Excess of Excitement, or upon the Excess of Collapse. These two Causes I imagine give two Species of Delirium –

The first, viz, From encreased Excitement, is occasioned by the Impetus of the blood which is a cause of greater Excitement, and one on which the Ordinary Excitement of the System in great measure depends – Now while this is encreased, and at the same time, the Collapse from the general cause of fever, subsists with respect to the Animal functions – Such a state will give a Delirium – and it is this that occurs to a person waking out of sleep, and in the hotfit of fevers.

The other Species comes on when there is an Excess of Collapse, from the Sedative Operation of Remote Causes, and the Ordinary impetus of the Blood is diminished – This is the Delirium that takes place in falling asleep, and in the coldfit of fevers –

Now from these Principles, which we find consistent with the Phenomena of sleep,

sleep and watching, we can explain the whole of delirium in fevers - It is applicable to the Transitory Delirium that happens in Intermittents and also in some Continued fevers, which may be supposed to take place without any topical Affection or Inflamatory tendency — But the Delirium appears mostly to depend wholly on the state of Excitement and Collapse of the Nervous system, from Causes immediately affecting it - Yet there may occur other Causes than these, which act differently on the Nervous system. A degree of topical Inflamation of the brain may take place, so as to give more or less of the phrenetic Delirium, from whence it will be more obstinate - There may also be other Causes of Excitement of the brain, which will have a similar effect - But of these hereafter -

There are still other Symptoms to be considered - Viz, the States of sleep and watching themselves, as occuring in fevers; which we must Explain on the same footing - If you consult the writings of Boerhaave and Van Swieten on Coma and Pervigilium, you will find that they refer all to the state of the Circulation in the Brain. &c But if our explanation of sleep and watching be well founded, this will not always be the Case - I hope I have shown that these symptoms

may

may depend on the State of the Nervous System alone, independant of the Sanguiferous, viz, its state of Excitement or Collapse. Moreover, if Sleep shew itself often in the beginning of fever, we may, I think, from thence conclude that the Cause of the fever acts by diminishing the Energy of the brain -

Having now finished my Ratio Symptomatum, or account of the Phenomena, I here conclude my general Theory of fevers, which I hope is well understood, though you may, perhaps, still have your difficulties - I would advise you to compare it with other Theories - My Theory, I think, recommends itself by its Simplicity - You will find that it depends upon no Hypothesis - It does not suppose any Lentor, Viscidity, or Acrimony of the fluids, of which we have no evidence; nor any other occult quality, or subtile change in the state of the fluids, which we can never more particularly ascertain - Neither does it respect any theory with regard to the nature of the nervous power - We have not introduced any subtile Hypothesis of a Nervous fluid. You may consider it either as a spirit, an Ether, an elastic fluid - an aqueous fluid - or what not - and this either flowing in Vessels, or passing along the Medullary substance &c. Still my Theory will stand, whatever Hypothesis you assume it does not at all affect what we have hitherto delivered -

But

But I must now touch upon the more complicated parts of the Doctrine - our System is very short. The following is the sum of what we have been hitherto doing.

Some have made fever to consist only in a frequency of the Pulse, or Increased action of the heart and Arteries - But I have said that every proper fever begins with a Cold fit. (vid. Hoffm. Tom. I. Pag. 301.) No increased action is either permanent or Troublesome, or properly constitutes a disease, unless when it is begun by Spasm - and I agree with all Pathologists in saying that this is the Cause of all the Phenomena that follow. How Spasm induces increased action is difficult to explain. I have laid some foundation for the Explanation, but I insist only upon the matter of fact - We conclude from their constant succession, that the Spasm is the Cause of the increased action -

Next with regard to the Cause of the Spasm, we found that it was not a direct Stimulus, as has been commonly imagined; but that in Case of fever the Spasm is founded on a state of Debility, which is induced by the Operation of remote Causes - That the Debility does take place in the beginning of fever, I inferred from the Phenomena, and therefore I assume it as a fact also. and there is certainly all the grounds imaginable for it, if we can judge at all from any Phenomena of the

the Animal System.

I said that a weakening of motions depending on the nervous Energy is a sign of that nervous Energy being weak- and attempted to show how, or give a Rationale of the manner in which, the Spasm is produced by the Debility - But this you may either take or not, as you please, I only regard the fact- And in the next place I say that the hot fit, which Physi-cians have looked upon as the fever, is an Effect the product of the other two - In short, my Conclusion is, that fever consists of the three states of Debility, Spasm, and Increased action - and that Debility and Spasm lay the foundation of the increased action - and therefore as this last is generally looked upon as the fever, I consider the former as the proximate Cause of fever - All this, then, is a short Connexion of facts - You will see the Soli-dity of the Doctrine by going on to the after appli-cation -

Afterwards I considered some of the principal sets of Symptoms that occur in fever, and showed how they were to be explained on our System - and by the way showed the Insufficiency of other Theories to do this - and further that they would not agree with the Phe-nomena - All this, then, tends to confirm ours - -

Now, then, I proceed to particulars - We are to consider the distinctions of fever, both as matter, and as

explained

explained on the general Theory we have laid down –

I have before said that fevers consist of the three states, Debility, Spasm, and Enervated action, which successively produce each other – But there is some doubt how far these three states take place in every Pyrexia – The two last, however, Spasm, and enervated action, certainly do – and hence the Character of the Class of Pyrexia which I have given is on that foundation – I say "Post Horrorem pulsus "frequens, viribus artuum imminutis" – Here I see I might have added "Post horrorem Pulsus frequens" et Calor auctus" by which I should have agreed with the antient and many of the modern Pathologists – But I cannot by any means agree with Dr Boerhaave's notion (Aph. 571.) – For the antient and most of the modern Pathologists confine the idea of fever to such Cases when there is an encrease of the pulse following the horror – It is this, then, that form the Character of the Class of Pyrexia.

Now this Class I have divided into five Orders –

I. Fever properly so called, that is, where the Spasm is produced by debility – We have adopted a description of this – Progressis languore, capitis dolore, et aliis debilitatis signis, pyrexia sine morbo locali primario.

II. Next I suppose that the Spasm may be formed from another Cause than debility, viz, a Congestion of fluids

fluids in a particular part — And this I say may act in a manner somewhat analogous to the Debility of proper fever, and induce Spasm — But we shall say more of this hereafter — This applies to Phlegmasia. &c —

III. The third order, Exanthemata, is in a manner a mixture of the other two; for here the circumstances of both take place —

Now these are all connected under the general Title of Morbi Febriles by Authors — And Linnæus (of Stockholm) in his Nosology comprehends them under that Title — But you observe that I have added two other Orders of Febrile Diseases, the Hemorrhagia and Profluvia — This is certainly done with propriety — and Dr Hoffman is the only person who has taken a proper view of the active Hemorrhages, and those cases of increased action (Profluvia), which belong to these Orders, and should certainly come under this Class, as being attended with Pyrexia.

I am now entering on what admits of more immediate application, viz, what relates to particular disorders, to distinguish them from one another — There is a set of diseases attended with an increase of the Pulse and of the heat — Such have been by authors distinguished by the Term morbi febriles, or fevers, and at all times have been ranked

into

into one Class – We are to examine what it is that distinguishes this Class from other diseases, and from all other Circumstances of the Animal Oeconomy. This, as yet, has not been well ascertained – Till very lately the increased pulse and increased heat were the only symptoms attended to in the distinction, as you may see in Boerhaaves Aphorism 571. and Van Swieten's Commentary on it (which I refer you to).

But it seems now generally agreed that this is not sufficient, but that it is necessary to take in also a preceding fit of horror – In this way, then, I make out the Character of my first Class, "Post Horrorem Pulsus frequens," &c – and as there is likewise in most Cases a considerable loss of strength, to avoid ambiguity there is subjoined "Viribus Virtutum imminutis" – Besides these, if you please, you may add Calor auctus – To this general Class I have given the name Pyrexia, as I could find none more proper, and as this seemed to me to be in a great measure arbitrary –

This is a very large Class, the particular diseases it contains being very numerous; and therefore before we proceed to speak of particulars it is necessary that we divide it into less general heads –

Accordingly

Accordingly I have divided the Class into five Orders, which in my Opinion are very distinct from each other - To the first I give the name of febres - "Progressus langore, lassitudine, et aliis Debilitatis signis, "pyrexia sine morbo locali primario" - This term (febres) is applied by Physicians to all Pyrexia, or our whole Class. But I find it necessary to apply it more particularly to this order; and wherever the term is at all appropriated by an author to any particular set of pyrexia, it always corresponds to our Character of this, viz, a pyrexia without any Local primary disease - Whereas the other four Orders are distinguished by topical affections attending the Pyrexia - and they are further easily distinguished from one another by the nature of this topical affection - The Phlegmasia have a primary topical affection or Inflamation - The Exanthemata have numerous topical affections following a fever, though there are one or two cases where they are but few, yet the distinction of the Order is sufficiently plain - And the other two Orders are cases of increased Evacuation following fever - What I was chiefly anxious about yesterday was to make the application of our Doctrine to these several Orders - I shall now, then, distinguish them somewhat in Theory -

The whole Class of Pyrexia, I have said, has Spasm and horror - The horror, as I formerly observed

observed, signifying or expressing the formation of spasm - But this arises from two Causes -

I. From debility, as happens particularly in fevers - and,

II. From Congestion, that is to say, a preternatural accumulation of the fluids in any particular part of the Circulatory system - This last I think, evidently applies to the Phlegmasiæ and Hemorrhagiæ. And in Exanthemata, where there is a fever arising from preceding debility, which is followed by total Eruption of Phlegmasiæ, there seems to be a combination of these two Causes - As to the last Order, that of Profluvia, I have some doubt about it. They also have sometimes a preceding Debility - But this is to be considered further hereafter -

Such are our distinctions of the Orders, by external and Obvious Symptoms, independant of all theory - But at the same time, if I can distinguish them in theory, I shall think it a proof of this being altogether a natural Class - and Consequently that our System gives a division of those diseases that will be more useful in Practice. - I am now then to consider these Orders in the Causes -

Ord. 1. Febres. (stricture dito)

These, I have taken much pains to prove, consist of

of the three states, Debility, Spasm, and encreased action, which are Causes and Effects of each other - These three states, though they mutual each other, are yet all of them, in some measure, present during the whole of the paroxysm (except perhaps a little time at the beginning and end). For in the time of the hot fit, notwithstanding the appearances of Reaction, when there is no sweat, or very little in proportion to the the encreased actions, I conclude that the Extreme vessels are still Constricted; that is to say, that the Spasm still subsists - and from hence do infer that the Energy of the brain is not restored, at least to the Extreme vessels - But Moreover the same appears from the sense of weakness or Debility subsisting in the Animal motions - and also in our Intellectual faculties during the whole of the Paroxysm - It is the continuation of Debility and Spasm that gives the duration of fevers; and these still subsisting keep it up - Now when we admit that these three states meet together, we can perceive that they may be in different degrees and proportions in different Cases & and this it is, I presume, that Constitutes the differences in fevers. Let us see that our Theory always be exactly

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correspondent to facts - We shall be led here to a larger discussion, which will consist of several steps - Now the union of the whole will be the Conclusion -

Fevers are most obviously of two kinds, Intermittent and Continued - Thus Physicians have at all times distinguished them - Intermittents in the strictest sense are those fevers that consist of a number of repeated Paroxysms separated by Intervals more or less of absolute Intermission or Apyrexia - As there is a diurnal revolution of our System, we may conclude that fever will be influenced by it - Now I infer also that Continued fevers consist of repeated paroxysms, though the hot fit continues the whole time, and there is no evident Intermission - Here, then, they are distinguished by the Exacerbations that are observed in their hot fit. 99 of 100 have evident exacerbations; and the repetition of paroxysms in these is to be distinguished by the Exacerbation, as the hot fit becomes more violent and remits alternately at regular periods - These Exacerbations in different Cases are more or less evident - Therefore Physicians, where the Remission is very considerable and evident, have given the name of Remittent fevers, by which they have much drawn in the meaning of Continueds - Thus they have multiplied distinctions.

But

But this has gone so far that some Physicians have conceived that there is a fever which continues in the same state running through but one Paroxysm in several days, or the whole Course of the fever, without any observable Remission at all - and to this they have given the name of Continuent fevers, in which they consider but one hot fit, or one reaction, as taking place through the whole Course of the fever - This is a matter of Consequence in our Pathology, to determine whether there is in fact any such fever - and however the Question is determined, it will have a considerable influence on the doctrine I am delivering.

To determine this Question it is to be observed that every Intermittent fever, or a Continued, that has remarkable exacerbations, finishes a paroxysm always in less than 24 hours - Now I do not say that we know so much of the nature of fevers and the Operation of their Causes, as to give a reason for this - But I imagine the general Causes of fever have little share in this Phenomenon of this Paroxysms being always finished in less than 24. hours - It does not seem to depend so much on the Operation of the Causes as on the nature of the Oeconomy itself, or a general Law of the System, by which it is disposed to certain

certain diurnal Revolutions – Of diurnal Revolutions we see many Examples in the System – And besides we should be led, a priori, to expect such Revolutions, from contemplating the Causes –; for if we consider the constant alternate Appearances and disappearances of the Sun, which occasions also a diurnal alternation of Light and darkness – heat and cold – that too of the Moon; Stars, &c, and the regular return of all our daily actions, we see sufficient Cause for establishing such a law or disposition to diurnal Revolutions, in a system so liable to the influence of habit as ours –

But, in the second place, we shall readily acknowledge this Law from considering the facts themselves, that are observed in our System, and are Examples of the diurnal revolution of the System — Such are the diurnal alternation of sleeping and watching – The different states of the Pulse at different times of the 24 hours (which comes more to our subject; for scarce any revolution is more regular than that, as you may see by Dr Brian Robinsons Observations) – The Pulse is always slowest at rising in the morning, which is not so much owing to want of Exercise, as to a regular habit; for though Exercise be used it will still subside again before noon – It rises in the afternoon, at dinner time and afterwards, not

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notwithstanding Exercise and all the various Irritations the System is exposed to at this time, it falls again about 7 or 8 o'clock - Then it encreases again till Midnight, or thereabouts, it rises higher than ever - This last encrease I have had occasion to examine - It goes till about two in the morning, and afterwards gradually subsides again to the state of its greatest Slowness in the Morning, of which I before spoke -

Here then is an instance of the regular diurnal revolutions of our system - and these we find to correspond to the Exacerbations of fevers - and therefore I conclude that fevers are modified by this diurnal habit of the system, and that the repetition of Paroxysms, or the regularity of the accessions or Exacerbations depend more on the nature of the Oeconomy itself, than on any thing specific in the particular causes of fevers - We shall find a confirmation of the same, when we consider the Ordinary progress of the Changes of the form of fevers - When a Quartan changes its form gradually to a Continued - The first step is to have the Paroxysm lengthened out - Next it becomes a double Quartan, or has a paroxysm on one of the intermediate days which was before free - When it is triple - and afterwards becomes a Remittent, and from that a Continuent, in which

which there is little or no Exacerbation to be observed -

The same is the course of Tertians, when they run into Continents, &c - and fevers of all forms are liable, in the same progress, to pass by different de-grees from the most distinct Paroxysms to very obscure Ones - Now since this is the Case, I think we may con-clude that it is always owing to the inaccuracy of our Observations that we cannot distinguish the Exacerbations of Continued Fevers, and not to a defect of the repetition of paroxysms in reality - We say, therefore, that there is no such thing as a Continent fever (so called), but that every fever which runs out to more days than one, con-sists truely of diurnal Revolutions - This Conclusion tho is certainly a matter of fact - and to excuse my differ-ing here, in some measure, from the Testimony of all Physicians, I observe (what I am very sorry however has really been the Case) that Physicians in this have been more ruled by the authority of others, their Predecessors, than by their own Observation - I say most Physici-ans have in this been directed by a servile regard to authority - and therefore the numerous Testimonies against us have not so much weight as it might seem - It has been acknowledge by Physicians of all Ages, that at least 99 of 100 fevers were such in which we can distin-guish Exacerbations every 24 hours * - and in the second

* Febres dicto Continuæ putridæ, sive Febres non Remittentes &c.

place, though there is no setting bounds to Nature (as she seems ever various, and to lye open to Exceptions) yet we are daily, as we advance in knowledge, finding greater and greater uniformity in her works upon the whole, and, therefore, every fact that may be brought against this Uniformity, respecting the periodical Exacerbations of fevers, may be suspected of Fallacy -

Thirdly, when a fever rises from distinct to obscure Paroxysms - When an Evident Intermittent turns gradually into a Continent - Here we must, I cannot but say, that the Observation is fallacious when it begins to appearance to have no remission or Exacerbation at all - and to all this I would add, if it can have any weight, the result of my own Observation and Experience with regard to which I affirm that during the Course of about thirty years pretty extensive Practice for the most part, I have never yet seen a purely Continent fever - I never met with one where I could not by attentive observation discern Remissions and Exacerbations.* -

Dr.

* To this an authority may be added not less positive as Dr Haller, after mentioning the Causes of diurnal revolutions of the System, says " Et hac vespertina pulsus frequentia intelligitur quasi in omnibus febribus Continuis, certus periodi et auctis, sub noctem gravior redeat Exacerbatio, ut omnino vix unquam in Europa etiam Ceduo febris aliqua vere Continuam Typum servat, ut nem remissionibus, et Vespertina incertiscentia interpolatus.

Element. Tom. II. P. 236.

Dr Dettaen, who is a Physician much engaged in practice, and also an attentive Observer, grants the same thing (see his Division of fevers Sect. 4. where he gives the distinction of them, Ratione Temporis) He makes four Orders of Fevers -

1. Continent Putrid
2. Continent non Remittent.
3. Remittents -- and
4. Intermittents.

He is unable however of the Difficulty that attends the second Order, and has added a Scholion, in which he says that in reality there are more called so with Propriety - "Febres dictæ Continuæ putridæ, sive febres non Remittentes exquisite ita dicuntur quæ cum Omnes, ratione mutatæ atmosphæræ mutatæ dietæ aut m mutatorum animi affectionum ipsiusque adventantis noctis, Symptomata quisquam imminuto auctore plus minus remittent aut Extendant, &c --" These are the reasons he gives to show that there are no purely Continent Fevers - And we make use of the same -

Having considered the nature of fevers in general

general, we began to take notice of their differences, and, as far as we could, to distinguish the Causes of them - We first took notice of the difference between Intermittents and Continueds - Fevers are often distinguished manifestly and obviously into separate paroxysms by evident Intermissions or Remissions - And these Paroxysms are always finished in less than 24. hours - I said however that Physicians have thought that there was a Continent fever, or one which did not consist of separate paroxysms, but was to be reckoned as having but one Increment or durament throughout its whole Course, from its coming on to its going off - But we enquired more strictly into the truth of this, and concluded that there was no such fever - this we were led to from Observing the diurnal Revolutions to which our Oeconomy is liable, and from whence all fevers are necessarily determined to have Remissions and Exacerbations once in 24 hours - Also as we observe in fevers a gradual passage from the Intermittent to the Continued form, and vice versa, we therefore presume, that if we do not always discover a Remission, it is rather to be imputed to the fallacy and inaccuracy of our observation - Further, as an apology for Contradicting the Testimony of so many Physicians, I took notice of the origin of their Opinions, and the fallacies and prejudices they lie under in making their Observations - and at last in Confirmation of my position, I added the authority of Dr De Haens Observations, and also my own - He says that all

all Fevers sometime or other "plus minus intendunt" &c which I use as an Argument against the Continent fevers of the Schools - Upon this ground, then, I establish a distinction of Fevers into Intermittent and Continued only. The former being such as are distinctly separated into several Paroxysms - The latter obscurely so.

I proceed to take notice of another difference of Fevers, viz, in the Intervals at which their Paroxysms recur. Here we shall enquire into the Causes of the principal forms of fevers.

Intermittents recur in the form of Quotidians, Tertians, and Quartans, in which at least 99 Cases of Intermittents out of 100 occur without Exception - Other forms indeed have been allowed by Physicians, but as these three are so general, we shall confine ourselves to them only - Observe how Mr Senac endeavours to confine the Intervals of Intermittents - He does not think it worth while to take any notice of these other forms, and is even for neglecting the Quotidian, choosing to refer it to the Tertian - But here I do not altogether agree with him - Before we proceed it is necessary to give some Precision to our Terms -

By Interval I mean that Space of time which passes from the beginning of one Paroxysm to the beginning of the succeeding one - and

By Intermission the time which intervenes between

between the end of one Paroxysm and the beginning of the next - Thus the Interval of the Quartan is 72 hours, the Tertian 48, and the Quotidian 24.

Now it is to be observed that the paroxysms of the Quartan is always shorter than that of the Tertian, and the Tertian than the Quotidian - From whence it appears that the shorter the Paroxysm is, the longer is the Interval, and consequently the Intermission also -

This suggests what is, perhaps, an Important Conclusion, viz, that the recurrence of Paroxysms is uni-versally connected with their duration - And Therefore the particular form they take on, of Tertian, Quartan, or Quotidian, which we have been speaking of, may be supposed to depend on the duration of the Paroxysm once formed - The longest Intervals being connected with, and dependant on the shortest Paroxysms - And vice versa - This con-clusion throws much light upon the difference of Intermit-tents and Continued; for every paroxysm that is pro-traited to 18 hours or longer, must from hence have a recurrence at the period of 24 hours - This is a fact - and there is no instance to the Contrary; for every fever whose Paroxysms last 18 hours, is universally found to recur at the period of 24 hours, that is, a Quotidian -

Now if any Quotidian has its Paroxysms

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protracted beyond 18. or 20. hours to 24, as it must have a recurrence at this period of twenty four hours, and consequently can have no Intermission - It will not appear in the form of a Remittent or Continued fever - Thus by a prolongation of Tertian Paroxysms, they are converted into Quotidians - and these again, in the same way, into Continueds. Therefore I plead in the above Conclusion, that the recurrence or Interval of Paroxysms is connected with, and therefore must be supposed to depend on, the duration of the Paroxysms themselves - And now it is plain that, to account for the different forms of fevers, we must look out for the Cause of the duration of the Paroxysms. In this we can go to a certain length with great Probability and even Certainty -

But to proceed in the Enquiry - The length of the Paroxysm seems to depend on certain Circumstances in the Cold fit - It has a relation to the degree of Horror and Tremor that arises -; for we not only find that Intermittents have in general their horror and Tremor more considerable than Continued fevers, but it is also well known that the Quartan (whose Paroxysm is shortest) has the horror and Tremor in the Cold fit more

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considerable than what occurs in the Tertian - and this again than the Quotidian - We conclude therefore that the duration of Paroxysms is regulated by the state of the Cold fit with respect to the Horror and Tremor that occur in it - And now you see the propriety of Enquiring into the nature of those Symptoms - We find them to be Symptoms of the reaction of the System: And both from I formerly said, and what I now say, we have reason to believe, that the Horror and Tremor being more considerable, are a mark of the stronger Reaction of the System - Therefore, from hence, we should be led to conclude, that the Paroxysm was shorter when the Reaction was greater, so as from its force to give a Solution more easily -

But here a difficulty occurs - For if we attend to the hot fit only, and judge from the heat, frequency of the Pulse, &c, we find that these are greatest in the longest Paroxysms than in the shorter - i,e. that the Reaction is greater in Quotidians than in Quartans - Therefore we will say, that the Continuance of the Hot fit in Quotidians is not so much owing to the want of Reaction as to something else which hinders the Solution of the Paroxysm *- This can

* The same Cause that determines the fever to Quotidian type, determines the duration of its Paroxysms - B

can be nothing else than the Constriction on the surface. It is the Spasm on the Extreme Vessels that gives the chief of the Irritation to the Sensorium, in order to produce its reaction - But the Constriction and Irritation it gives, are not always in the same proportion. And we can easily perceive that if the Constriction be greater than the Irritation it gives, the Paroxysm in that case will be longer - And if the Constriction be moderate and the Irritation considerable, a short paroxysm will be produced - But before we proceed, least this should be reckoned Hypothesis, let us compare it with facts - This obliges me to anticipate a little the Doctrine of Inflamation - Here there is a Congestion of fluids in a part, and on this depends the Pyrexia attending Inflamation - This Congestion is an Irritation more particularly applied, and has peculier Effects on the arterial System - What I presume is, that the Tone or Tendency to Contraction in the arteries is by that Irritation encreased; from whence they embrace the fluids more closely - They will contract more strongly, and more strongly resist dilatation - Upon the whole the size of the Arteries is diminished - Now in this disposition of the arterial System I presume consists the Diathesis Phlogistica so famous among Physicians - This I conclude from the hardness of the pulse

attending

attending it, from the Causes of it, which are various Irritations of the arterial System; and from its Cure depending on Remedies that diminish the Tone, as Venæsection, which is the most powerful means of relieving the arterial System - Therefore under this Diathesis Phlogistica, or increased Contractility of the arterial System, the Constriction of the Extreme Vessels will be more considerable; so that if the Causes giving Diathesis Phlogistica mix in any measure with proper fever, the increased Tone thence arising will give a greater Constriction in the febrile Spasm, so that the Constriction will be greater than the Irritation it gives, and Consequently the Solution more difficult.

That this is the Cause of the Continued form of fevers, I conclude

1. from the fever of Phlegmasia being always continued; for though by the force of a diurnal habit they may possibly admit of Remissions, these are not considerable; and they do not intermit in any Case whatever.
2. From the Conversion of Intermittents into Continueds from stimuli applied -
3. From Continued fevers being the production of cold

Cold Climates, where the Inflamatory Diathesis reigns.
4. From Intermittents being more specially the natives of hot Climates - and
5. and from Blood-letting not being admissible in Intermittents, but very generally in Continued fevers -

From these arguments, then, we conclude that, the Diathesis Phlogistica is a Cause why Fevers put on a Continued form, because it gives rise to a Spasm, wherein the Irritation will be less in proportion than the Constriction - But though this is the general state of the Case, I shall now give you my notions of a fever of the Continued kind, where the Case is different.

I said we have reason to believe that a debilitating power is commonly concerned as a Cause in every Instance of fever - But the Debility produced is different in different Cases - Sometimes it is so great as immediately to extinguish Life, without producing fever at all - Thus in Cases of high Contagion, in time of a Pestilential fever prevailing, some persons are often seized suddenly and drop down dead, without having any appearance of fever at all - Others have a slight Cold and horror, but nevertheless die without the formation of a proper hot fit - There are some Cases wherein a hot fit succeeds the horror and Cold, but it does not

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extend to the Extremities, there remaining Cold - Here, then, there is a Reaction of the Brain produced, but it extends to the neighbouring parts only, and affects the heart and large arteries, but not so as to reach the Extremities - and the Patient at last sinks, and in this mixed State Life is destroyed -

In this Case, then, I presume that the Debility is so great as to take off the Irritability of the brain - and though some Irritation takes place, it is not in sufficient degree to extend its Influence to the Extremities - and from hence the fever remains Continued - Therefore from either of these two Causes, viz, Excess of Spasm, which hinders Solution; or Excess of Debility, so as to take off the Irritability of the Brain in great measure, depends, I think, the Protraction of every Paroxysm in Continued fevers - In pure Intermittents, both debility and Spasm take place; but the Debility is not so great as to take off the Irritability of the Brain - nor is the Spasm so strong as to resist the Reaction.

But we must proceed to a nearer distinction - There are two Causes of Continued Fever, one wherein with the Causes of fever in general, a Phlogistic Diathesis also occurs, and in which Consequently the Continuence or duration depends upon the Excess of Spasm:

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and this Physicians call an Inflamatory fever -

2. There is another Case where the Debility, which is the fundamental Cause, is in so great a degree as to prevent a proper Reaction, by taking off the Irrita-bility of the brain - Here the duration is owing to the Excess of debility, and is called a Nervous fever.

This is the principal distinction of Continued Fevers now generally established over Europe, and into which Physicians are getting more and more constantly. Now then we must see how far these two Causes of fever take place, and what are the obvious Symp-toms which distinguish them.

1. The Synocha, or Inflamatory fever, is peculiar to Cold Climates and Seasons - It attacks the robust and sanguine, and such as are predis-posed to Hemorrhagy - It comes on suddenly without much debility or Languor, Horror or Tremor, or Sickness and Vomiting in the Cold fit - and this is very short - It never arises from Contagion, often from Cold - The hot fit is very considerable, attended with great heat, equally diffused over the whole Body; a fullness of the face, and appearance of Propensity to Sweat - at this time the Pulse is full, strong and quick - a Throbbing is felt in the

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Temples, accompanied with headach, and frequently Delirium - The Breathing is frequent with some Degree of anxiety, but neither full nor Laborious - Sometimes the small of the Back, and Joints of the Limbs are pained - The appetite is not quite lost - Seldom any degree of Nausea - The Thirst is very considerable, and arises from a sense of heat - The Urine is high coloured, without sediment - and the Disease commonly terminates in seven days - The Exacerbations and Remissions are Obscure and inconsiderable - and the Termination is Commonly by Hemorrhagy or Sweat, the Urine at the Same time acquiring a Sediment - These then are the marks of Inflamatory fever, and as yet they are no where well ennumerated - but best in Dr Hoffman Vol. 2. Pag. 105, under the Title of Febris Sanguinea, gracis Synocha.

We suppose this fever to depend on a strong Spasm, arising from Phlogistic Diathesis, while the Energy of the Brain is highly excited - It is principally Cured by Venesection, and other means of relaxing the Arterial System - and the Blood drawn has generally a buffy Coat covering it - But of this we shall say more hereafter.

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General Principles, however general they may be, still have their use in Physic - They at least serve to explode false Theories - Thus Hoffmans Conclusion in making Spasm the Proximate Cause of fever, might explode the Doctrine of morbific matter, which had prevailed and been reckoned the Cause of fever for several hundred years before - The same might have been the Effect (though it was not) with regard to Lentor, of the pains taken by Van Swieten to show that the Cause of Intermittents was in the Nervous System - At the same time, however, unless these Conclusions applyd particular in Practice, they are not so useful -

We began with distinguishing between Intermittents and Continued Fevers, the difference of which consists in the more or less frequent and uninterpolated Recurrence of Paroxysms; for we found that the duration of Paroxysms is connected with the length of the Interval or Intermission - Now, as we have explained how Spasm is the Cause of the paroxysm, we have shewn how it comes to be a cause of its Longer duration - But in other Instances the same also depends on a Degree of debility -

As to the first Case we concluded that there was present a Phlogistic diathesis, which gave a greater Tone or Contractility to the Arteries, so as

so as to occasion a more obstinate Spasm, and thereby give a longer Paroxysm - This agrees with facts - As to the other Supposition, it is also very admissible; for though there be nothing peculiar in the Spasm; yet if the Debility be very great, it will also have the effect to protract the Paroxysm, by taking of the irritability of the brain - In this consists the principal difference commonly noted by Physicians among fevers - viz, between the Inflamatory and Nervous fever - We have already considered the former, and are now to relate the Phenomena of the other,

The Typhus, or Nervous Fever - This belongs to warm Climates and warm Seasons, and can commonly be observed to have arisen from Contagion. It attacks the weak and such as have been exposed to debilitating causes, and particularly at the same time to the Operation of Cold - This fever comes on slowly, and for some days before it appears formally, affects the person with loss of appetite, Languor and Lassitude - With these is commonly combined a sense of Cold, or rather a sensibility to the Cold air - This especially attacks towards the Evening, with slight horror, which is succeeded by a slight degree of heat; with uneasy and restless sleep in the night - In the Morning these are

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relieved in the Morning; but in the Evening the same Symptoms again occur, with an aggre-vation of the hot fit – After one, two, or three such days as these, the hot fit becomes more remark-able and constant, with a moderate heat, and a pulse somewhat, but not very, quick, but neither full or strong, and much ~~of~~ hard – With these appearances there is great Prostration of Strength, or debility of the animal functions, and a remarkable depres-sency of Mind – Appetite quite lost – Naufea arises, and Vomiting frequently succeeds – With all these the Patient gets little sleep, and that too is much disturbed – Shortly too a Delirium or Typhomania takes place – The heat is not great, and often not ex-tending to the Extremities, but unequal over the whole body; sometimes very considerable in cer-tain parts – The face is generally pale – Seldom flushed, at least in any degree – The Belly is ir-regular, sometimes bound, sometimes loose – The Urine is in its natural state, or pale without Sediment – The Exacerbations at first so evident become more obscure – and thus the fever is lengthened out to two or three weeks, or more, and terminates at last without any visible Evacuation – The Phenomena shew that the Sensorium is principally affected, as appears from its dis-turbed

disturbed Functions in the Delirium - Tremor Carphologia - Typhomania, &c. and I think all the Symptoms may be explained from a Debility of the Sensorium.

Now if Fevers were tolerable steady in their appearances, we should have much less difficulty in their Theory - But the Phenomena of fevers are greatly diversified, the Symptoms of the Inflamatory and nervous being often intermixed - To explain this it is necessary to Observe that the Circumstances do not remain the same through the whole course of the fever - But the Recurrence or repetition of Paroxysms produces a change from what exists at the beginning of the fever - From the power of Reaction becoming greater, or the Spasm less strong in the repetitions of Paroxysms, it becomes able to resolve the Spasm, which it could not before do - and this gives the natural Solution of a fever, of which we shall speak more particularly hereafter -

But sometimes the repetition of paroxysms, or other Causes, diminishes the power of Reaction - Or otherwise the force of the Spasm may be enerous, a vigirous reaction, instead of resolving, giving more obstinate Spasm, so as to protract the fever to a longer time, and not to be resolved at all - In which

state

state it subsists till at last the Reaction ceases, and Death ensues - Thus both Events in the repetition of paroxysms are to be explained -

Now when Fever begins under the form of a Synocha, or Inflamatory fever, and ends in Typhus, I think we can explain it in this manner, Viz, that when under the Circumstances of Phlogistic diathesis a fever comes on, we can here see how this comes to take on the form of Inflamatory fever at first while the vigour of the Constitution and Phlogistic diathesis subsist - But afterwards, when by the Repetition of Paroxysms the force of the System, and at the same time the energy of the brain, are diminished - We can see as well how the appearances come now to be changed, and the fever in the End put on the form of Typhus - Accordingly this is a very Common Combination, at least in Cold Climates - and to such a Case we have appropriated the name of Synochus - These Therefore Constitute the Genera of Continued fever -

Further, Fevers suffer changes in another View, as when from the form of a Continued, a fever in the end becomes Intermittent, as in the Example of Pringle's Camp fever - Or when from an Intermittent a fever is changed into a continued, which is by much

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the most frequent and dangerous Case of a change in this respect - This latter is exemplified in the malignant Intermittents of Marcates, Forth, and Elghorn, (as they are called), the same kind of fever which Dr Lind supposes to be the chief form of Fever in the East, where men are exposed to Marsh Effluvia, and also in the West Indies. Now both these can be explained upon the same principles as the other Cases above mentioned. The first comes to pass precisely in the same manner as the change of Inflamatory Fever into the Typhus - and as to the other it is to be referred to circumstances induced after the beginning of the fever. We may impute it to a powerful Cause of debility, not at first combined with Phlogistic diathesis, or any Cause of strong Spasm -

There is another Modification to be noticed here, with respect to fever; and that is the multiplication of the Extraneous matter received into the Body, by its acting as a ferment - and this many think of the utmost Importance - Though it appears that the Miasmata, or Contagion, in order to produce fever, must act chiefly on the Nervous System - They are likewise often of the nature of

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fermenti, and as much act on our fluids also – From hence it is that they come to be diffused and propagated among mankind. Now this multiplication of the ferment received (though contagion is indeed sometimes spread without any manifest alteration in our fluids) proceeds often to a considerable degree of Putrefaction – and this gives the Putrid fevers, so marked by the antients, who made a division into Putrid & non Putrid – But the antients applied the word Putrid with very little accuracy or propriety – and many moderns are not much more correct. However the more accurate of the Moderns apply it only where there appears some effect of Putrefaction. Thus the marks of the Putrid state actually present are, when the Blood drawn does not Coagulate, or at least in the usual manner; when the Crassamentum is less firm, and leaves the Serum of a redish color, resembling Lotura Carnium – Or when the Blood issues spontaneously from different passages, without any local affection of the part, as when it flows from the Lungs without any preternatural affection of that Organ – Or from the Kidneys without at the same time Nephritic Com-

-plaints

Complaint, that is, if it comes away with the Urine without any Ulcers, &c of the parts; - Or if it comes away by stool without any Dysentery - But the most common Example is from the Nose, where without giving a Crisis it comes away in drops only, then it is to be imputed to the putrid state - Further when the blood is poured out into the Rete Mucosum of the Skin, forming Petechiæ, Vibices, &c - But such effusions sometimes have a deeper seat - also even from the Pores of the Skin - These are supposed to arise from a Putrid dissolution of the blood rather than energic action, and are Symptoms of diseases of a putrid tendency - Moreover the same are corroborated if there be also a remarkable Fœtor of the breath and Excretions, fœtid Cadaverous Stools and Urine - and a Cadaverous stench of the whole body -

Now where these Symptoms occur, and only where the most remarkable of these occur, do we admit the presence of a putrid state - The vapour produced in this manner from the putrefaction of Animal matters is of a very deleterious, sedative, poisonous nature, and powerfully tends to induce debility - This appears from the Effect of Gangrene and Sphacelus, which we find to kill so quickly -

also

Also a Gangrene in any part of the Body has remarkable debilitating Effects - and the same we conceive may happen in the advance of Fevers - From the same Phenomena too I conclude that the miasmata and Contagion which produce fever, are of a Sedative nature - Now when Debility ~~ex~~ ouers, or is remarkably encreased at the end of fever, it is a dispute with me whether it arises from a Repetition of paroxysms, or the multiplication of the Contagious matter by its acting as a ferment - I must observe that there may be different Cases of putrifaction - The state of the Putrefency and the Consequences arising from it, may be truely owing to a putrid ferment introduced - But Putrefiency may also be primarily owing to an affection of the Solids, independant of a ferment, from a cause acting wholly on the Nervous System - But we are not here to attend to these differences, or consider the matter any further at present - The several genera of Fevers, and more particularly the Typhus and Synochus, may be attended with different states of putrefiency in the fluids, which may give a sub-division into Species

I have now laid a foundation for dis-
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distinguishing the Genera and Species of fever, when not complicated with the other Orders of Pyrexia — But fever is often joined with Phlegmasia, as in Sydenhams Febris Pleuritica, which begun the disease and Constitution of the year 1673 — See his works — "Quæ ——————— accederunt" Here is a plain proof that the fever is the Original disease, from its coming on a fresh, and continuing after the other had gone off — See the Constitution of the years 1673, 74. and 75. Here there is no doubt that the fever was the original disease, and that the Phlegmasia supervened afterwards. But very frequently there are Cases occurring, where it is difficult to distinguish which is the Idiopathic disease — and as it is a matter of great Importance, some attention ought to be paid to it — It may be determined from the following Considerations.

1. From the Season of the year — In the Spring Phlegmasia are most common, and rather to be expected. While the Autumn is more productive of fevers —
2. As the Symptoms of the one or the other begin first. If the Inflamatory Symptoms first take place, we have reason to look upon the Phlegmasia as the primary disease — If otherwise we conclude it to be fever —

3.

3 When the Symptoms of the two diseases Simulta-neous, we can know which is the fundamental only by knowing the diseases that are Epidemic at the same time.

4. When the Exacerbations and Remissions are more regular and evident, the fever may be looked upon as the Prevailing disease, which was the Case with the Synochus Pleuriticus of Sauvages, or Sydenham's Febris Pleuretica, when the fever subsisted some time after the Pleuritic Symptoms had Ceased.

In the next place proper fever is frequently Combined with Exanthemata, the third Order of Pyrexia; for there are Cases where Exanthemata arise solely from a certain Condition of the Skin and state of the fever, independant of any peculiar Specific Con-tagion, such as the Small-pox, Measles, &c are each respectively owing to. an Example are the Petechiæ, an Eruption that comes out in some fevers. But this indeed I do not reckon an Example. It is most evi-dently a symptom of some fevers. The Miliary Erup-tion has been attended with more difficulty. It is I think in some Cases an Example of the same ~~the same~~ kind, and has given great disputes in this

this view among the present Physicians of Vienna. De Haen maintains that it is always the Effect of fever, and therefore Symptomatic; and Dr Stoll on the other hand that it is Idiopathic, and gives Character to a particular fever.

We observed that fevers are often Complicated with the other disorders of Pyrexia - accordingly we considered them as complicated with Phlegmasia, in which Case we said that the Phlegmasia are sometimes a symptom of fever only. But sometimes they are Complicated, and the Phlegmasia are the principal disease. Here we cannot discuss this more fully, until we have considered the Phlegmasia more particularly.

We were proceeding to consider fever as combined with Exanthemata. I observed that there were several Examples of Exanthemata arising from a specific Contagion. But that there are also others which are merely Symptoms of fever, only accidentally produced. This has occasioned a warm dispute at Vienna, the particular subject is the Miliary Eruption. Upon the whole

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we are led to conclude that these Physicians are very much in the Spirit of Controversy; for though the Miliary Eruption is undoubted for the most part symptomatic, yet if there be any truth in the observation that the disease first appeared at one port, and from thence gradually spread over the rest of Europe, it will appear to be sometimes owing to a specific contagion - But we conclude that it is most frequently symptomatic

1. From its having always been Sporadic in this Country; for in a course of thirty years practice, I have never once seen it Epidemic.

2. From its affecting chiefly Lying Women, who are in particular Circumstances of the warm Bedgowns -

3. It arises from a variety of Causes which Operate Sporadically - and also it varies as to the time of the Eruption, which shews that it cannot be connected with any Specific Contagion -

4. From its Occuring only in a certain state of sweating; for this disease is always preceded by Sweating &c -

5. From its being always produced by sweating in

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some people – In these, therefore, and because it appears in some fevers sometimes sooner and sometimes later, without observing any regular period, we may say that it is produced by a certain state of the fluids and Condition of the Skin conjoined –

I go on to speak of the other Complications of Fever – There is no Case of a Complication of fever with active hemorrhage, so as to give a particular Species of disease – Sometimes such Hemorrhages do happen in fevers, but then only as a Crisis at other times when hemorrhages occur in Fevers as a symptom of the dissolved state of the blood, they are nothing else but what properly occur in putrid Fevers, and in Consequence of Putrefaction, and cannot give a Species different from that of Putrid fever above mentioned.

Lastly, Fevers are often Complicated with Profluvia, in which Case it is difficult to ascertain which is the primary disease – There are marks, however, to determine this, as with respect to Phlegmasiæ, and Exanthemata – But the particular Consideration of this must be delayed till we come to speak of the diseases themselves, viz, Catarrh and Dysentery –

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This, therefore, is our general Doctrine with respect to the Genera and Species of fevers - We have hitherto proceeded, sometimes on Facts, sometimes on theory. But now I am to begin and ascertain the facts only, speaking of the Genera and Species, as they have been delivered by authors - Here therefore it is we begin our Nosologia Methodica - But before proceeding to this, I think it necessary that we review what we have already delivered, and give a short Summary or Recapitulation of it, in order to lay down the whole in a more plain manner, as a System of Connected and independant Parts, that you may the better see through it, and Comprehend it - In this Recapitulation I would wish also to touch several Parts of our Preleminary Lec-tures; but our time will not admit of it.

Recapitulation.

I only say, with regard to my general Plan, that I teach the Practice of Physic on a new footing - This does not consist in the Novelty of my Doctrine, but in the manner of delivering the Facts - I reduce the sub-ject to general Principles, which are all so many Facts - Thus I follow a dogmatic Plan, by general-izing on facts; for it is altogether from these that

I form my general Conclusions - and by this means hope to banish every thing Hypothetical; for I would have you herein to receive nothing but what is confirmed by facts, and has its foundation therein.

On this Plan I proceeded in delivering the Doctrine of Fevers - I began with laying down the Principal and leading Phenomena of Fever - and as fevers only differ in the frequency and Duration of their Paroxysms, you will from thence see the Propriety of our taking such an Example, when it is in its most distinct form - such as a Paroxysm of an Intermittent fever. I then went on to speak of their Succession, and the Combinations they undergo in different Cases - But as it is almost impossible for me to describe the whole of the great variety that occurs here - I referred you for such a History to the Authors on this subject, as Sydenham, Morton, Hoffman, Senac, Torti, Cleghorn, &c - Upon the Whole, however, I shewed you that fevers differs only in the duration of their Paroxysms - upon this we proceeded to investigate the Proximate Causes of Fevers By the Proximate Cause of a disease, I mean that state of the body, or its Parts, on which the general Symptoms depend - and by changing which we obtain a Cure - Thus in Dropsy, the apparent Symptoms are

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a swelling of the Belly, &c - Now here the first thing I consider is, whether it depends on a collection of water or of air. Whether it be an Ascitis or Tympanitis. after ascertaining this, perhaps I go further, and trace it up to the Cirrhosity of the Liver - Here then I stop, having discovered the full Proximate Cause, which will direct us in the Cure - Now in Fever I can in the same way go so far as to say that the Proximate Cause is a debility of the Nervous System - But as to what this Debility is, what state of the Brain, of the Nervous fluid, &c, it depends on, I cannot tell. — I can go no further than just to say, that there is a Debility which takes place; and in that I have gone a sufficient length to direct my Practice - all the Conclusions I formed are matters of fact; and therefore I proceeded on them with Confidence - a principal Conclusion was from the above simple Cause, a Debility of the Nervous System and all the Series and variety of Phenomena that follow this, I think we rendered sufficiently probable - Look into the late Author Mons. Juerdoe, and see how he is embarrased by his having taken up the notion of a Complicated Cause - Also see the same in Van Sweiten and Boerhaave. Besides from many Considerations we are led to adopt one simple Cause, to which the whole Series of the

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Phenomena is owing - This Cause Operating may produce some principal and leading Circumstances in the System, upon which others may be supposed to depend -

Now, as the Cold fit is first in Order of the Phenomena of a febrile Paroxysm, I conclude it is the first in Series of Cause and Effect - And with respect to it, instead of saying with Boerhaave and Van Swieten "in omni Febre Intermittente," I say, with Hoffman, in omni Febre there is a Cold fit in the beginning - In the next place we found that the Cold fit is an affection of the Nervous System, and were Senac, and the several Authors Boerhaave and Van Swieten, we shewed were inclined to believe in this Position - We then proceeded to enquire wherein the Affection of the Nervous System consisted; and from Contemplating the Phenomena, placed it in a Debility of the nervous power, or Energy of the Brain - This I know as well, and am as certain of, as that when I move my finger I know that it is owing to the Contraction of a certain Muscle by my knowledge of Anatomy - But I mentioned Spasm of the Extreme Vessels, as succeeding the former in the series of Cause and Effect -

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This is as much a fact, and occurs as universally in fevers as the other - And these two are followed by an increased action of the Heart and Arteries, in which Authors have generally considered fever more specially to consist - Now both these last states depend upon the former as their Proximate Cause - So far, then, we have come to a useful Conclusion. We say that in every fever these three States occur, viz, Debility, Spasm, and Increased action, succeeding one another as Cause and Effect - Now to explain how these are produced by one another, I said was very much to our purpose - But all we could do here was to refer to a general Law of the System, viz, the αὐτοκράτεια. - But I would wish to go further in the Explanation - and as to this I say that, I really believe the Connexion between the above mentioned States, by that Law of the System, is mechanical - We found no difficulty in accounting for the Production of Spasm from Debility - But it is more difficult to account for Increased Action. I thought it was illustrated by the Operation of Cold - But neither can we explain how the Reaction is produced by cold - However I could not omit to take notice of a

difficulty

difficulty that occurs here, viz, that it might be imagined Fever was owing to a direct Cause of Spasm - But where are such direct Causes of Spasm? We know of none - But we conclude that the action of Cold produced a Sense of Cold with a debilitating State, similar or analogous to Debility - However, at any rate this can be no proof that the cause of Spasm is not commonly a Debility; for there are many Cases where an evident, previous debility takes place, and where the fever arises from manifest Causes of Debility, without the action of Cold having any share at all in Exciting it - This indeed is the Case with all fevers without Topical affections But whatever there is in this Reasoning relating to the Operation of Cold, it is sufficiently evident as a fact; that debility and Spasm do take place in every proper fever - and these are the Causes of the third State, energic action. this you may take as one of our leading Principles.

In order to make the application of the Doctrine more Complete, I considered in the next place some of the principal Symptoms of fever - and first Horror and Tremor - I apprehended these in a new

Light

Light, adhering, however, to matter of fact; and concluded they were a part of the Reaction of the System, and that in proportion to these was the reaction more effectual in resolving resolving the Paroxysm - But here I have gone a certain length only - The duration of Paroxysms is certainly ~~determined~~ Depended, in great measure (and indeed it is very natural to suppose so), on the force of the Reaction - and this, we have shewn, is indicated by the Horror and Tremor - But still, when we consider the Cases of Phlegmasia we are at a loss - There are certain Peculiarities in the horror and Tremor, but what these consist in we cannot say, but are led to conclude that there are certain circumstances in the Reaction that is produced, that we are unacquainted with; which however have a considerable Share in determining the duration of the Pyrexia -

We proceed next to consider other Symptoms of fever, viz, those regarding the State of the Stomach, Nausea, Vomiting, &c - These, we found tended also to confirm our Doctrine; for I shewed that Debility might produce them also - of which

which we have Instances enough in other Cases besides Fever - But I shewed that there were also other Circumstances which intervened to produce these Symptoms, i.e., the Spasm on the Surface; for they are always proportioned to the Constriction of the Skin - These Symptoms, therefore, not only indicate a Debility, but also the Spasm or Constriction on the Skin - This led somewhat to the Consideration of Sympathetic Affections, from whence we are induced to believe (as I have formerly shewn in the Institutions), that Debility, or (as I call it) Collapse, is often a Cause of the Reaction of the System - I cannot here give a Detail of the proofs on which this Position is founded, but for such as have not had the Opportunity of hearing my Institutes, I desire that they would receive this, upon Credit, that it is established upon fact --

Upon this foundation I said, that the Vomiting which occurs in fever is in one light, when violent, a bad Symptom, as it shews the force or degree of it cause, viz, great Debility - But still I maintained that the action of Vomiting itself was by no means a bad Symptom, but of a Salutary tendency, as it expresses the Reaction of the System --

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Now as this vomiting is a frequent Symptom, and often attended with a great Ejection of Bile, it has been an Opinion from the time of Hippocrates down to Senac, that the Bile was the Cause of the Vomiting. But depends very much upon the Supposition that the state of the Bile is the Cause of fevers in general. Which we have shewn to be without grounds; for the like appearances of a great Effusion and Acrimony of the Bile, especially in the autumnal Season, often occur, without Fever. But it appears that these bili-ous Symptoms are not essential, as being connected with the Cause of fevers, but are owing to Circumstances only. and may be explained in three ways.

1. From the natural change of the Bile, and its disposition to become more acrid and abundant in Autumn, which is always the Case; for the Vomiting of Bile is always most remarkable in Autumnal fevers.

2. The accumulation of blood in the System of the Vena Portarum, which always takes place very considerably in Intermittent and Remittent fevers, will sufficiently explain those Symptoms. But further

3. We are induced to believe that the Vomiting in Fevers is

is not owing to the Bile, or any direct Stimulus applied to the Stomach, because it is connected with other circum-stances, and appears to be produced Symptomatically — and we can explain the appearances we are speaking of from the very action of Vomiting, tending to emulge the biliary Excretories, and thus occasion the greater effu-sion of it —

And moreover the Opinion of the Cause of Fever being in the Bile is still further Confuted, in so far as we know of another Cause of fever, viz, Contagion and Marsh-Effluvia, which we find to Operate under all Circumstances of the Bile — and also what-ever be the Condition of the Bile, it does not produce Fever, unless this other Cause be Present.

I am very anxious that you should Comprehend me on this Subject of Fever, — on which I have pro-ceeded slowly in delivering it; and hence am now giving you a Recapitulation, in which you are allowed to take our general Conclusions, while you miss the proofs and illustrations. Thus you will better see the Connexion of the whole.

Upon this plan, then, my principal Conclusion

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is, that the whole phenomena of fever (Depend) on these three Circumstances of the System, Debility, Spasm, and Increased action of the heart and arteries - With this farther, that these three states regularly succeed each other, as they occur in point of time - They also follow each other in the same Order successively as Cause and Effect - Now these general propositions I consider as matter of fact, viz, that they are Causes and Effects to each other; - but how they are so, and how the one state produces the other, I cannot undertake to Explain - I cannot give the Reason why the debility that occurs in Syncope is not productive of Spasm, and the other Consequences, such as happen in Fevers - This I cannot explain, at least what Conjectures I could make towards an Explanation are fitter for Private Conversation than the Professors Chair - However with respect to the above Propositions concerning fever, I consider them as matter of fact; and it is not necessary that we be able to give an Explanation.

In the next place I was considering the several Symptoms that occur in fevers - and of these, with respect to the affections of the Stomach, I observed that in our System, when the action of any part is excited, we must not always look for the Cause of it in

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a stimulus applied immediately to that part; but it may be, and often is, owing to an affection of parts at a distance.

To this I might add another Proposition (if you are all prepared for it), which is sufficiently clear, viz. that such Consent of Parts is not owing to any immediate Connexion between those parts, but that the one is influenced by the State of the other by means of the Sensorium.

A third particular I would have you attend to, and admit as proven, is that these Causes of excited action of the part are not always direct stimuli - but are often such as are really Causes of Collapse, though they have the Effect in some Instances of Exciting Action -

Now I say that any Organ of the Body may be affected in this way - It may have an increased action excited in it without the necessity of a stimulus applied to it. Thus when a secreted fluid fluid is poured out in greater Quantity, or in greater acrimony, it is not the greater quantity or greater acrimony of the Secretion that is

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to be looked upon as the Cause of the affection, but it is the effect - When a Woman from any Cause pours forth what we call Salt Tears, it is not to be imagined that there was a quantity of these Tears previously collected, and from hence the present effusion - But it is purely the effect of an increased action communicated to the Gland - From a Fracture of the Skull a man, perfectly healthful before, throws up Porraceous Bile - Now this I apply to the Vomiting and bilious appearances that occur in Fevers -

We proceed in the next place to consider another set of Symptoms, those of the Intellectual Functions; with respect to which I shall shortly run over what we concluded - Our Conclusions were founded upon some Physiological Propositions - The first of which is (what will readily be admitted), that when our Intellectual Functions are affected, it depends upon Causes that make a change in the Nervous system - Sometimes a change in the Circulation may affect the Intellectual Functions - But this is only by changing the state of the Nervous System -

2. I lay it down as another Proposition, that there are

Causes

causes which change the state of the Nervous system, by acting directly upon it.

3. That from the action of these Causes the Nervous System is in different degrees of Vigour and activity, & which we give the names of Excitement & Collapse.

4. That Consistence and Coherence in thinking depend upon an Equality of Excitement over the Nervous system, and particularly the common Origin or Sensorium, which constitutes the difference between the states of Sanity and Madness. In the former there is a free Communication between the Several parts. I say, therefore, that Delirium depends upon an in equality of this Excitement, which gives Inconsistency and Incoherence in thinking. Of this I think we gave a very plain and easy illustration, by taking a view of the states of Sleeping and Watching, and the Intermediate state between these. For a person does not fall asleep nor awake all at once, but by degrees. and therefore in the Intermediate state we always see somewhat of a Delirium present. For the Excitement in waking does not proceed equally at once over the whole Sensorium. and the same is the Case with respect to the coming on

on of Collapse in falling asleep - and hence too we se
Incoherence and Inconsistency of thinking in that state.
- Upon the same footing we explain dreaming; and
also, I think, the Delirium of fevers must be referred
to somewhat of the same kind - I presume that in this
case the Causes of fever operate to induce a Collapse,
or diminution of the Energy of the brain to a certain de
gree, which, however, we often se proceeds to the
length of Coma, or morbid Sleep; while at the same
time the action of the heart and arteries remains; which
may be considered, as certainly it is, a cause of Excite
ment - Hence, therefore, the Excitement of the brain,
under such Circumstance, is in some parts in a greater,
in some in a lesser degree - And from such Circum
-stances it is plain Delirium must arise. At the
same time while we have this general Explanation,
depending upon the Debility, or Collapse and Excite
-ment, we perceive that Delirium may be of two
kinds

I. When the Collapse is moderate and the Excitement
of some Parts encreased from the Encreased Impetus
of the blood in the Brain:- This will give a
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Delirium of the Phrenetic kind.

II. When the Excitement is not great, but considerable Causes of Collapse are in action - This gives a Delirium analogous to that which occurs in coming out of sleep, under the Influence of certain Stimuli; To which state of the System Pathologists have given the name of Typhomania.

This is a short Explanation of the general or leading Symptoms of Fever - and I think it serves to strengthen our general Doctrine - Upon this subject I could not help observing, with respect to the Coma of fevers, that Pathologists, as Van Sweiten and others, refer it to the state of the Circulatory Organs - Whereas, if we attend to the time at which it occurs, viz, often in the cold fit of Fevers; and to its being frequently of a Transitory nature, I think we can only refer it to the state of Collapse of the Nervous System, not proceeding from any affection of the Sanguiferous System, or Circulatory Organs - This is the notion I would give you of Delirium (as it most frequently occurs) ~~most frequently~~, and also of Coma - But at the same time I do not mean to exclude a third Cause of Delirium,

which

which may depend on the State of the Circula-tory Organs within the Cranium, or local affec-tion of the Brain.

Hitherto I have considered fever in the ab-stract, but am now to enquire into its differences. Here we add another Step to the Doctrine - I menti-oned just now three states of fever, as distinct, and succeeding each other - But now I say that they all three are present, and subsist together in some degree thro' the whole Course of a fever - and it is the diffe-rent degrees of these, and the different Proportions they bear to each other, that constitutes the difference of fever - Upon this I began with considering the most obvious difference, viz, between the Intermit-tent and Continued - Here I observed that Physici-ans have generally reckoned two kinds of Conti-nued fevers, the Remittent and Continent - But we denied the existence of the latter, both from reasoning and facts, and found that every fever which runs out to a number of days, consists of repeated Paroxysms, though these are more or less observable as distinct; which is the Circum-stance

circumstance that distinguishes Intermittents and Continueds - Now what is it that constitutes this difference? - We found it to depend on the more or less frequent recurrence, or duration of Paroxysms: and that these depended on one another: that this is so, though we cannot tell how it comes to pass, is a fact, and an obvious fact; for it is well know that the longest paroxysms produce the shortest Interval, and Vice versa. We are, then, to consider the Cause of the Longer duration of Paroxysms -

In this I suspect I was not well understood. We see that when the action of the heart and Arteries is encreased by Exercise, it no sooner reaches a certain degree than a sweat flows - and if the Exercise immediately cease, the sweat very soon ceases also, - though the Excretories are thereby relaxed - But this is not the Case in fever - Here the action of the Heart and arteries is encreased in the hot fit, in like manner; but still no sweat flows - I conclude, therefore, that here is some resistance to the flowing of the sweat, viz, that there is still subsisting a Spasm on the Extreme Vessels, which resists the force of the En-
-creased

Enervated action, and hinders the flow of the sweat — Now if the Spasm and enervated action were always in the same proportion to each other, we should have but one form of fever more or less — But this is not the case; for there are two separate Causes of the long duration of Paroxysms, viz. Excess of Spasm, or a want of force in the Enervated action — Either of which will occasion a long Paroxysm — It is therefore on the proportion of these to each other that the duration of every paroxysm of fever depends — and as the duration is owing to the Excess of the one, or defect of the other, a Continued fever receives different forms. These are the general Propositions —

But we endeavoured to descend to the particular Causes, wherein the duration was owing to Excess of Spasm, or the Enervated action not being of sufficient force — With regard to the first Case, we concluded that the Spasm was obstinate, or in Excess, where it was formed on a Diathesis Phlogistica, we said consisted in an enervated Contractility of the arteries — as a proof of this I observe, that we often see the Causes of fever combined with the Causes of Phlogistic diathesis,

and

and in such Cases a Continued fever is formed: Thus, when Intermittents are changed into Continued fevers, it is owing to Causes which give Phlogistic diathesis.

The other Case is, where the Spasm being given, the encreased action is in too small a degree, so that from thence the Paroxysm is allowed to continue longer - This is owing to Excess of debility, from the powerful Sedative action of the Causes of fever - We see instances of this where fevers of the longest duration are connected, and, I would say, dependant on a state of Extreme debility - Therefore we refer the long duration of Paroxysms in all fevers to one or other of these causes, either Excess of Spasm from Phlogistic Diathesis, or Excess of Debility from the strong Sedative action of the Causes of fever - and therefore it is evident, that in some Cases Venesection may Cure a Continued Fever, in others encrease it - In some Cases Evacuations may change a Continued fever into an Intermittent, in others convert an Intermittent into a low Continued. This View of the Matter not only gives the difference between the Intermittent and continued form of fevers; but also reduces Continued fevers to two kinds.

J.H.

It brings us to the common distinction of continued fevers, established by Physicians, into the Inflamatory and Nervous kinds; the first where a Phlogistic Diathesis is present, the other where Symptoms of debility prevails.

Thus therefore the common Distinction of fevers now generally fallen into by Physicians, from Observation, is very consistent with our Doctrine. But in the next Place, that we might examine into the matter more particularly, we took a view of the principal symptoms of both Inflamatory and Nervous Fevers; and found that those of the former, together with its Causes, all concured to make us refer it to a Phlogistic diathesis. Those of the latter, with its Causes, to Excess of Debility. The only difficulty is, that, though a distinct and separate Concourse of Symptoms, often mark out the Inflamatory and Nervous Fevers by Themselves; yet they are often mixed, viz, it is Common that the Inflamatory form appears in the beginning of a fever, but it ends in the Nervous. Such a form of fever, a Combination of the two, Physicians have often described, and I

I have endeavoured to explain it - I think it depends on this, that when the fever comes on under Circumstances of Phlogistic Diathesis, or its causes and those of Diathesis Phlogistica concur, these will Operate more remarkably at first, specially while the System is in full natural Vigour, so as to give the fever an Inflamatory form in the beginning - But when the causes of fever come to be multiplied, and to acquire more power, or the System further debilitated from the Continuance of the Disease, the fever still continues, but its form is changed from the Inflamatory into the Nervous -

Thus, then, I have adapted our Doctrine also to this very common form of fever, where the two fundamental forms are mixed - and to this I have appropriated the name of Synochus - and these are three Genera, and there are only these three of Continued fevers -

So far I have applied my Doctrine to the different forms, or Distinction of Continued fever. But it applies further, to Intermittents, and gives the different forms and distinction of them - The

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difference of their Type is not of much Importance. But there is another distinction which we mean to attend to here, that is, as they are liable to interchange with Continued fevers. In this view we have two cases of Intermittents.

1. Where the fever begins Continued, but ends Intermittent.

2. Where it begins distinctly Intermittent, and afterwards runs into the Continued form.

The first case I explain in the same manner as the Synochus above mentioned, viz, that Causes of Inflamation concur with Causes of Intermittents in the beginning; - but that afterwards the former are diminished, while the latter increase, and the fever Consequently becomes either Nervous or a distinct Intermittent. and as to the other Case, where the Change is from an Intermittent to a Continued, I say it is often owing to bad Practice, viz, the use of Stimulent Remedies: and here therefore there is an accessory Cause of Inflamation. But the other is by far the most

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frequent case - and I mention that it is the natural effect of the Continuence of these fevers, though they being in the Continued and Inflamatory form; for this cause to multiply itself, or encrease in strength, so as more commonly to give the form of an Inter-mittent -

Having proceede thus far, there is only one other particular to be noted, viz, that though the Causes of fever (only as I have hitherto considered them) act, in exciting fever, on the Nervous System - yet there are many Cases where they act only as fer-ment on the mass of Blood, so as to induce more or less of a Putrefiency (we dare not say Putridity, because it is incompatible with Life) This therefore gives the distinction which Physicians have so generally followed, and at all times thought necessary, into Putrid and nonputrid - The Antients indeed speak with no precision on this subject, and the Moderns, for the most part, have not done much better, from straining too much to follow them - I think it should be confined to those Cases where a putrid ferment is in-troduced, and acts on the fluids, so as to induce a putrefiency -

Q.

of this state of fever also I have given you distinguishing marks - But though I spoke of the introduction of a ferment, I would not confine the state of putrescency absolutely to the cases where it occurs; for I imagine that the actions of the Oeconomy itself tend to induce Putrescency, independant of Extraneous matter introduced to act as a ferment - There may then be two Cases of Putrescency, more specially in fevers.

1. When it is owing to a putrid ferment introduced.
2. Where the Putrescency is induced from the Circumstances of heat, greater Velocity of the blood, particular state of the Tone of the Vessels, or other Causes that may favour Putrescency, being more remarkably encreased in fevers, there may then be a state of Putrescency induced, though the Cause acts only on the Nervous System, and excites a fever without acting on the fluids as a ferment -

It was not necessary, however, to attend to this distinction as the origin of Putrescency in the fluids - If we attend diligently to the marks before laid down, as indicating the Presence of a state of Putrescency - But I took notice of it chiefly for the

the same of another Argument, viz, that in the effect of Putrescency to produce a poison, which is a powerful Sedative, and has a deleterious action on the Nervous System - And as the state of fever tends of itself to induce a degree of Putrescency, this is another reason why Fevers, though they begin with the Inflamatory form, often in the end put on the appearance of a nervous fever - and also for the same reason Intermittents are often in the end converted into Continueds of the same pernicious nature, viz, from Excess of Debility induced by Putrefaction.

I have therefore now carried you through the whole of the principal differences of fevers; and have shewn them to be agreeable to our System - I have explained the most natural Circumstances of fever on our Doctrine; and we find that the whole tends to confirm it. I have also shewn you other nearer distinctions of fever, according to its Complications; - and have made some remarks on fevers as Combined with Phlegmasiæ, Exanthemata, and Profluvia, in order, in such Cases, to distinguish which is the Idiopathic disease. But these cannot be fully and more particularly considered till we have spoke of these

Orders

Orders.

This, then, finishes our general Doctrine – We shall next proceed to consider them more particularly, and to speak of their differences as a matter of fact, in which we shall ascertain the Species – Here then we shall begin our

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